

US 101 LAST CHANCE GRADE ROAD STABILIZATION PROJECT

01-DN-101
DEL NORTE COUNTY, CALIFORNIA
EA 324700, PM 14.8/ PM 15.6

Initial Study With Proposed Negative Declaration



Prepared by the
State of California Department of Transportation

May 2007



General Information About This Document

What's in this document:

The California Department of Transportation (Caltrans) has prepared this Initial Study, which examines the potential environmental impacts for the proposed project located in Del Norte County, California. The document describes why the project is being proposed, the existing environment that could be affected by the project, the potential impacts, and the proposed avoidance and minimization.

What you should do:

- Please read this Initial Study. Additional copies of this document as well as the technical studies are available for review at:

Caltrans District 1 Eureka Office
1656 Union Street
Eureka, CA 95501

Del Norte County Library
190 Price Mall Circle
Crescent City, CA 95531

and at: <http://www.dot.ca.gov/dist1/d1projects/envdocs.htm>

- We welcome your comments. If you have any comments regarding the proposed project, please attend the public hearing and/or send your written comments to Caltrans by the deadline.
 - Submit comments via postal mail to:
Rod Parsons, Chief, Environmental Branch E-1
California Department of Transportation
P.O. Box 3700
Eureka, CA 95502
 - Submit comments via email to rod_parsons@dot.ca.gov.
 - Submit comments by the deadline: June, 20 2007.

What happens next:

After comments are received from the public and reviewing agencies, Caltrans may: (1) give environmental approval to the proposed project, (2) undertake additional environmental studies, or (3) abandon the project. If the project is given environmental approval and funding is appropriated, Caltrans could design and construct all or part of the project.

For individuals with sensory disabilities, this document can be made available in Braille, large print, on audiocassette, or on computer disk. To obtain a copy in one of these alternate formats, please call or write to Caltrans, Attn: Rod Parsons, Environmental Branch Chief, P.O. Box 3700, Eureka, CA 95502; (707) 445-7815.

SCH#

01-DN-101
PM 14.8/ PM 15.6
EA 324700

US 101 Last Chance Grade
Road Stabilization Project, from Approximately 2.2 Miles North of Wilson Creek Bridge to Approximately
2.9 Miles North of Wilson Creek Bridge, Del Norte County

INITIAL STUDY

Submitted Pursuant to: (State) Division 13, California Public Resources Code

THE STATE OF CALIFORNIA
Department of Transportation

May 9, 2007
Date of Approval


Cindy Anderson, Office Chief,
North Region Environmental Services – North
California Department of Transportation



Proposed Negative Declaration

Pursuant to: Division 13, Public Resources Code

Project Description

The California Department of Transportation (Caltrans) proposes to stabilize a portion of U.S. Highway 101 (US 101), known as Last Chance Grade, located approximately 11 miles north of Klamath in Del Norte County. The project would include the construction of retaining walls at six locations, a slight highway realignment in order to minimize the size of the walls, and the addition of 4-foot shoulders throughout the project limits. Retaining walls would range in height from a minimum of approximately 3 feet on the east side of the roadway to a maximum of 25 feet on the west side of the roadway.

Determination

Caltrans has prepared an Initial Study for this project and has determined that the proposed project would not have a significant effect on the environment for the following reasons:

- The proposed project would have no permanent effect on air quality, noise receptors, or public services.
- The proposed project would have no significant effect on geology and soils, hazards and hazardous materials, hydrology and water quality, and transportation/traffic.
- The proposed project would have no effect on archaeological resources, paleontological resources, agricultural resources, geological sites of record, local communities, wetlands, floodplains, land use and planning, mineral resources, utilities and service systems, or wild or scenic rivers.
- The proposed project would have a less than significant impact on visual resources, historic resources, and biological resources.

Impacts to threatened and endangered species and aesthetics would be minimized with the following project features:

- Retaining walls would be designed to be sensitive to the existing natural landscape and would blend with their surroundings to the greatest extent feasible.
- Revegetation would be performed to soften the visual impacts of retaining walls and any long-term visual impacts created by denuding construction staging areas

within Caltrans right-of-way and in temporary State Parks construction easements. Where conditions allow, native species would be planted on affected slopes.

- See-through railing would be used to improve motorists' views of the Pacific Ocean.
- Temporary erosion control devices would be installed on slopes where erosion or sedimentation could degrade sensitive biological resources. Additionally, all temporary disturbance areas would be revegetated with appropriate combinations of native species unique to the habitats found in the project area upon completion of construction.
- All construction personnel working in the biological study area (BSA) would be required to attend environmental awareness training.
- All temporary fill and construction debris would be removed from the BSA after completion of construction activities.

Cindy Anderson, Office Chief, North
North Region Environmental Services
California Department of Transportation

Date

Summary

Project Description

The California Department of Transportation (Caltrans), in cooperation with the Federal Highway Administration (FHWA), proposes to stabilize a portion of U.S. Highway 101 (US 101), known as Last Chance Grade, located approximately 11 miles north of Klamath in Del Norte County. This 0.8-mile section of roadway is located between Post Mile (PM) 14.8 and PM 15.6 on bluffs above the Pacific Ocean. The project is located in the Del Norte Coast Redwoods State Park, which is within the Redwoods National and State Parks boundaries. The proposed project would improve roadway reliability and reduce the risk of road closure due to landslides.

The project proposes to construct six retaining walls, three on the west side of the highway, and three on the east side of the highway. The project would slightly realign US 101 to the east in order to eliminate the need for additional permanent transportation right-of-way to the west of the alignment. The project would add 4-foot shoulders throughout the project limits, and the retaining walls would range in height from a minimum of approximately 3 feet on the east side of the roadway to a maximum of 25 feet on the west side of the roadway. Retaining walls to the west of the existing roadway would be built below the roadbed.

Implementation of the project would result in temporary visual and traffic impacts to the project area, as well as requiring a temporary construction easement from Del Norte Coast Redwoods State Park. Project features include post-construction revegetation of disturbed areas and traffic control management during project construction.

Required Permits and Agency Consultation

The Coastal Zone Management Act of 1972 (CZMA) is the primary Federal law enacted to preserve and protect coastal resources. The CZMA sets up a program under which coastal states are encouraged to develop coastal management programs. States with an approved coastal management plan are able to review Federal permits and activities to determine if they are consistent with the State's management plan. The project would occur within the coastal zone and would thus require a local coastal development permit from Del Norte County.

Threatened, endangered, and special-status species are protected under the Federal Endangered Species Act, under the jurisdiction of the U.S. Fish and Wildlife Service

(USFWS). The proposed project may affect species under this act; therefore, informal Section 7 consultation with USFWS may be required.

Threatened, endangered, and special-status species are also protected under the California Endangered Species Act, under the jurisdiction of the California Department of Fish and Game (CDFG). The proposed project may affect species, therefore, coordination with CDFG may be required.

In accordance with National Pollutant Discharge Elimination System (NPDES) regulations to minimize the potential effects of construction runoff on receiving water quality, the State requires that any construction activity affecting 1 acre must obtain coverage under the NPDES General Permit for Storm Water Discharges Associated with Construction Activity (General Permit Order No. 99-08-DWQ). Permit applicants are required to prepare a Storm Water Pollution Prevention Plan and implement Best Management Practices to reduce construction effects on receiving water quality by implementing erosion control measures. The Caltrans permit (DWQ No. 99-06-DWQ) covers storm water discharges from all Caltrans construction projects except for those projects that the Regional Water Quality Control Board (RWQCB) determines should be covered by an individual permit. Caltrans is required to notify the RWQCB that a project is to be covered under this permit at least 30 days prior to the onset of construction, which is done by filing a Notice of Intent (NOI). The project would obtain permit coverage under the Caltrans Construction General Permit by filing a NOI.

Because US 101 in the project area is part of a historic landscape district, Section 106 of the National Historic Preservation Act (NHPA) and Section 4(f) of the Department of Transportation Act apply. Accordingly, Caltrans would seek concurrence of “no adverse effect” from the California State Historic Preservation Officer to meet the requirements of Section 106 and a de minimis finding under 4(f) for the historic resource.

In an effort to avoid impacts to traditional cultural properties, a Native American Heritage Commission (NAHC) consultation was conducted, and information about the project, as well as an opportunity to comment, was provided to a list of individuals identified by the NAHC. In addition, because the proposed project would involve temporary easement acquisition in a State park, Section 4(f) of the Department of Transportation Act applies, and consultation with California State Parks has occurred (see Appendix D).

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Chapter 1. Proposed Project

1.1. Introduction

The California Department of Transportation (Caltrans) proposes to stabilize a segment of U.S. Highway 101 (US 101) from approximately 2.2 miles north of Wilson Creek Bridge to approximately 2.9 miles north of Wilson Creek Bridge in Del Norte County, California. The total length of the proposed project is 0.8 mile. The slopes that lie above and below the roadway are prone to landslides that periodically disrupt the flow of vehicular traffic through the area. The project location and vicinity are shown on Figures 1 and 2.

U.S. Highway 101 (US 101) is the primary north-south transportation corridor in California's North Coast region. US 101 is part of the National Highway System and is heavily used for intercity and interstate commerce, as well as public access to State and National parks, rivers, ocean fishing, and beach areas. Between post mile (PM) 14.8 and PM 15.6, the existing facility is a two-lane highway located on bluffs above the Pacific Ocean between the town of Klamath and Crescent City in Northern California. The area overlies Franciscan Formation geologic conditions that contribute to the distress present on the existing roadway. The road was built on a steep cut slope, which has rock outcroppings and intermittent forest (second growth), with many wide-open views of the Pacific Ocean. Large, deep-seated and shallow landslides are common throughout the area. Consequently, this segment of US 101 has historically required substantial maintenance to avoid road closures. This roadway segment is known as Last Chance Grade.

The Route Concept Report (RCR) for US 101 (Caltrans 2002) describes this segment of US 101 as a two-lane conventional highway with truck passing lanes. The RCR and the North Coastal Counties Supervisor's Association (NCCSA) outline goals to improve safety and operations on this portion of US 101.

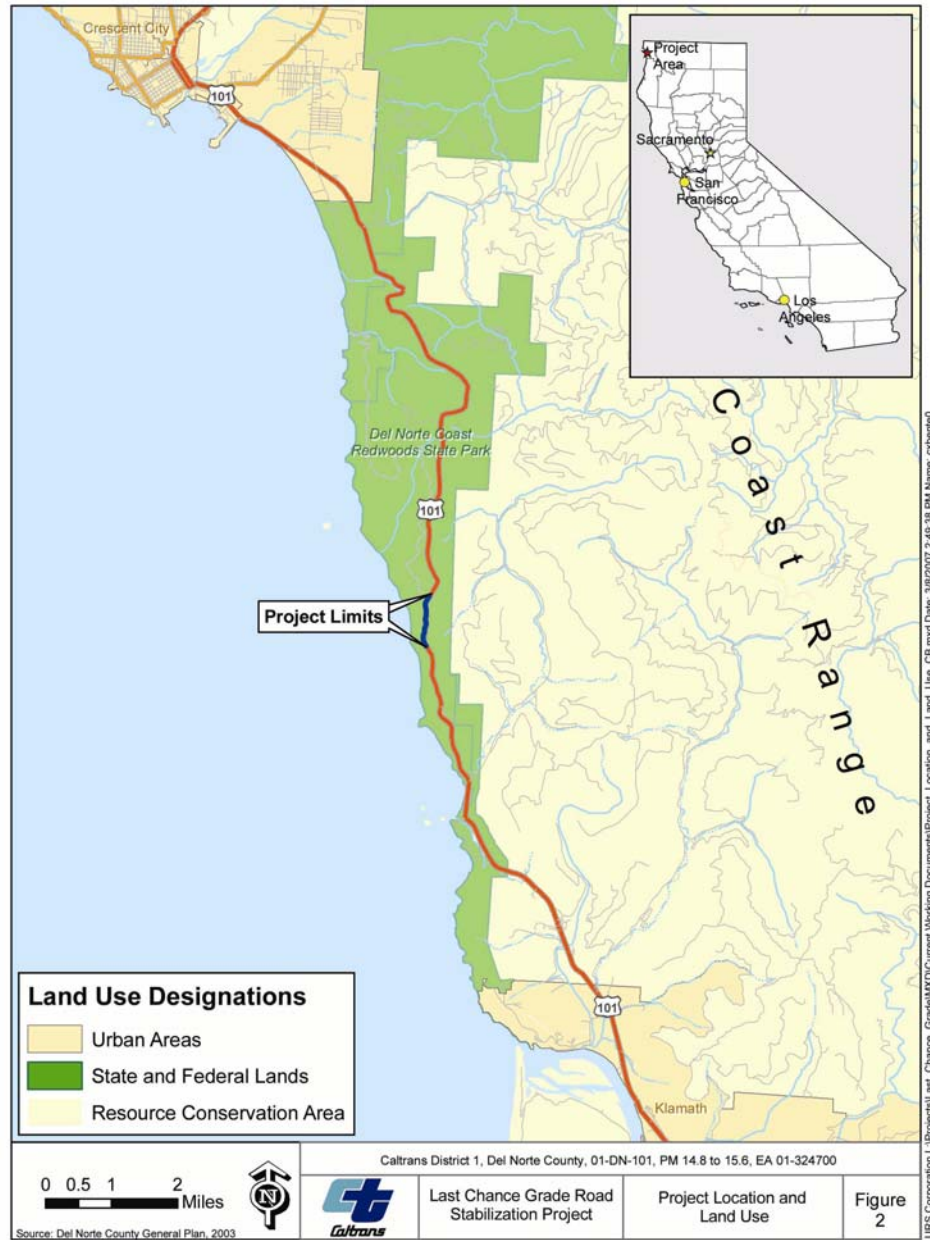
1.2. Project Purpose

The purpose of the project is to improve roadway reliability and reduce the risk of road closure due to landslides. Improvements are necessary to stabilize the slopes that lie above and below the roadway, thereby reducing their potential for failure and ensuring an unimpeded flow of vehicular traffic through the area. The stabilization

Figure 1 Project Vicinity Map



Figure 2 Project Location and Land Use



project would combine retaining walls with shoulder widening and vertical realignment of the roadway to provide a safer roadway, thus satisfying long-standing priorities of the North Coastal Counties Supervisor's Association, Caltrans, and other stakeholders.

1.3. Project Need

The existing roadway is a two-lane conventional highway with standard 12-foot lanes and shoulders varying from 1 to 8 feet in width. The alignment can be described as generally curvilinear. The project site overlies unstable Franciscan Formation geologic conditions that result in a continually deficient roadway. Large, deep seated and shallow landslides are common throughout the project area. Consequently, this segment of US 101 has historically required substantial maintenance to avoid road closures.

This project would locally stabilize the landslide area but would not address the deep-seated slide that marks the difficult geology of the project area. As the primary north-south corridor for local and regional transportation for the North Coast, US 101 is an extremely important transportation lifeline for the region. Accordingly, the project seeks to ensure that this major roadway remains open to vehicular traffic to the greatest extent possible. The project was initiated as a result of joint concerns of Caltrans, the Del Norte Local Transportation Commission, and the general public. Also, the project area (as part of the area between Wilson Creek and Crescent City) is outlined as part of the safety and operational improvement strategy in Caltrans' Route Concept Report. The project would be funded under the Roadway Protective Betterment Program.

In the past, Caltrans has spent an average of \$640,000 per year on maintenance and capital projects for US 101 in and near the project limits (between PM 12.5 and PM 15.6). The work that has been necessary to keep this section of US 101 open includes, but is not limited to, slide and rock removal, slipout repair, rail replacement and repair, paving, striping, traffic control, excavation, fill, slope stabilization, drainage repair, and construction of retaining walls. The settlement that occurs during the wet conditions common to the area requires frequent inspection and repair of the roadway. The long-term results of this settlement are poor vertical alignment and a rough ride for the traveling public. It is anticipated that without stabilization, maintenance spending and the potential for closures would increase over time.

Geotechnical experts suggest that two types of catastrophic failure events are possible in the project area. One would be caused by a major seismic event and the other by significant rainfall. Either event could result in an estimated 3- to 10-foot movement of the slope on which the roadway is built. A catastrophic failure of this scale would likely cause a major disruption of vehicular traffic, potentially causing a roadway closure of at least one to two weeks. Smaller failure events, typically caused by rainfall, have resulted in estimated movements of 2 to 6 inches, leading to roadway disruptions lasting one or more days.

1.4. Project Background

The project area was originally included in a larger-scale US 101 roadway stabilization study known as the Wilson Creek Bluffs Bypass project. A Project Study Report (PSR) on the Wilson Creek Bluffs Bypass project was initiated in 1987 to address nine areas of identified roadway instability and to study bypass alternatives between PM 12.5 and PM 16.5. In 1993, after review of the potential impacts of the proposed alternatives on parklands and old-growth trees and due to a lack of support from regulatory agencies and conservation groups, the decision was made to not implement the project.

Studies performed in conjunction with the Wilson Creek Bluffs Bypass project and other nearby projects led to the designation of the Last Chance Grade section of US 101 as a highest-priority stabilization project. The highest-priority designation was based on the fact that five of the aforementioned nine areas of identified roadway instability are located in the Last Chance Grade slide area. Accordingly, studies of the area were initiated in 1993, and a PSR was completed in 1995.

Approved in February 1995, the second PSR for road stabilization in the Last Chance Grade area included the following four alternatives.

- Alternative 1 – Realign the roadway in a tunnel behind the slide plane
- Alternative 2A – Minor roadway realignment and stabilization with a soldier pile tieback wall and slope stressing
- Alternative 2B – Minor roadway realignment and stabilization with two soldier pile tieback walls
- Alternative 3 – Major retreat behind the slide plane

Based on geotechnical studies and the 2001 final geotechnical report that evaluated the alternatives presented in the 1995 PSR, Alternative 3 was found to be the only alternative that would successfully avoid the deep-seated slide that affects the area. However, as impacts from this alternative on surrounding State and National parklands would be difficult to get approved, Alternative 3 was not pursued. As the alternative with the best potential for balancing the need to minimize slide risk to the roadway with the need to minimize impacts to surrounding parklands, Alternative 2B emerged as the basis for further study.

Alternative 2B was subsequently analyzed in a value analysis (VA) study conducted in October 2002. The VA study focused on increasing roadway stability of the existing highway corridor, minimizing impacts to State park right-of-way, and protecting old-growth trees. The study used a systematic approach to identify a project's function in relation to overall cost. VA alternatives were considered on a basis of improved performance, likelihood of implementation, least community impact, cost savings, or any combination of those criteria. Because the deep-seated slide cannot be stabilized by conventional means, the VA study recognized that some of the alternatives developed, such as Alternative 3 discussed above, were neither cost-effective nor acceptable solutions for the unstable terrain of the project area. Instead, an alternative was sought that allowed for future maintenance due to the natural movement of the deep-seated slide underlying the roadway but reduced the risk of slides and slipouts in the area. The VA study used Alternative 2B from the 1995 PSR, the previously studied alternative that best addressed the priorities outlined above, as a baseline for comparison of three new alternatives formulated by the multidisciplinary team taking part in the VA study. VA study Alternatives 1, 2, and 3 were formulated with the following four site-specific issues in mind:

- Potential impacts to redwood trees
- Potential impacts to parklands within the US 101 corridor
- Short- and long-term roadway stabilization
- Staying within Caltrans right-of-way

VA Study Alternatives 1, 2 and 3 can be described as follows:

- Alternative 1 would construct retaining walls throughout the project limits.
- Alternative 2 would construct retaining walls addressing only specific areas of terrain instability.

- Alternative 3 would augment the maintenance program in place at the time with a contingency plan to accelerate road damage repairs on the existing alignment in the event of a major failure.

The Project Development Team and the various county and agency stakeholders involved in the VA study accepted Alternative 2, which focused on retaining walls that only addressed specific terrain instability conditions. Alternative 2 was accepted as the preferred alternative due to its lower cost, reduced need for additional transportation right-of-way, and lower degree of environmental disturbance than the other alternatives. In a supplemental PSR produced in July 2003, a refined version of the aforementioned Alternative 2, renamed Alternative 4, was identified as the preferred alternative. This alternative redefined wall locations and included improvements to the geometrics of the roadway.

Once Alternative 4 was identified as the preferred alternative in the 2003 supplemental PSR, it was divided into Alternatives A and B, which address the specific areas of roadway instability with two different combinations of retaining walls. The locations of the retaining walls in Alternative A required additional permanent transportation right-of-way from Del Norte Coast Redwoods State Park while Alternative B required only temporary easements for the construction of some walls. Under Section 4(f), Department of Transportation Act of 1966, transportation projects are required to avoid permanent take of park property whenever possible, so Alternative A was subsequently eliminated based on a written agreement with State Parks (Appendix D) which allows the temporary use of Park property during construction.

1.5. Project Description

1.5.1. Proposed Project: Alternative B

The proposed project would construct six retaining walls, three on the west side of US 101 (below the roadway) and three on the east (uphill) side, and would realign the roadway to the east in order to eliminate the need for park right-of-way to the west of the alignment. The existing concrete k-rail would be replaced with an aesthetically treated metal beam guardrail. The project would add 4-foot shoulders throughout the project limits (Figure 3) and additional shoulder widths in front of the retaining walls to accommodate the space beyond the proposed metal beam guardrail needed to deflect a vehicle in case of impact. Due to settlement within the project limits, the

Figure 3 Project Area & Major Features of Proposed Project (1 of 2)

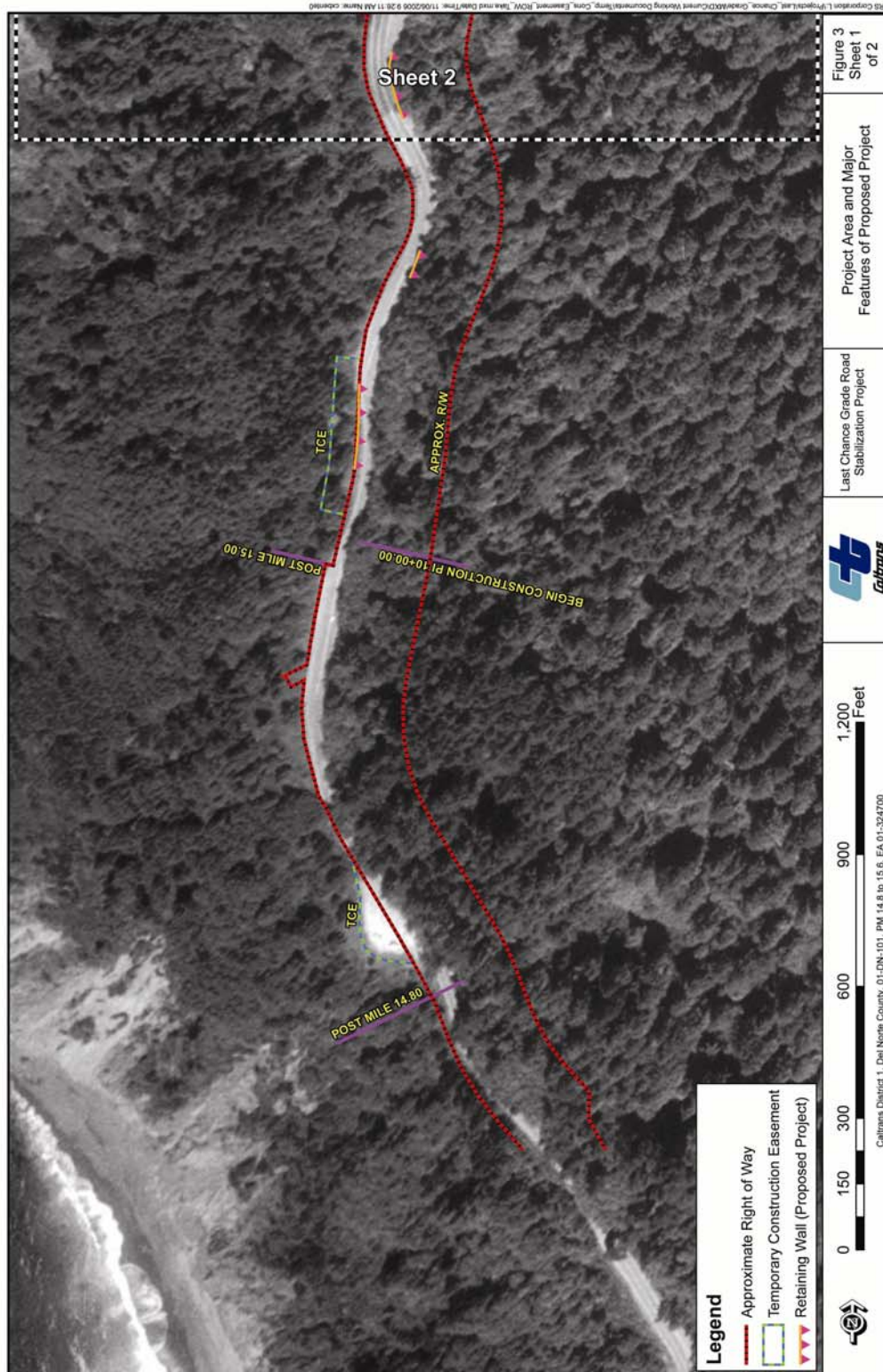
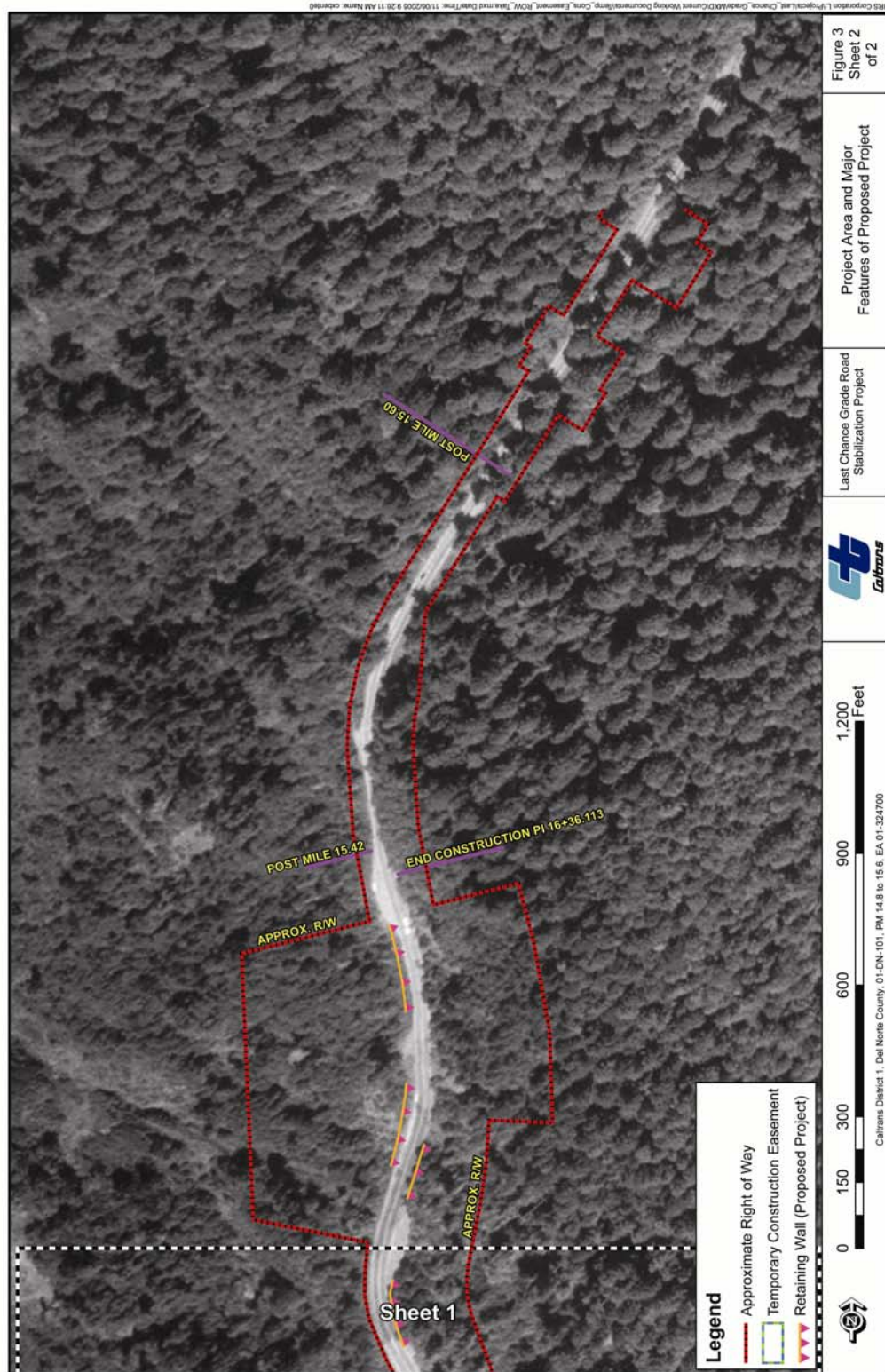


Figure 3 Project Area & Major Features of Proposed Project (2 of 2)



profile of the new road would be altered from the existing to smooth out the grade. Some asphalt concrete (AC) leveling would be required to increase the superelevation on two curves. After construction completion, conditions for bicyclists and motorists using this section of US 101 would be considerably improved because of the consistent shoulder widths, vertical and horizontal curve improvements and the addition of 4-foot shoulders and protective guard railing.

The heights of the retaining walls would vary from approximately three to twenty five feet, with the taller walls on the west (ocean) side of the highway. Construction would require acquisition of 0.64 acres of temporary construction easements within Del Norte Coast Redwoods State Park. No permanent right-of-way would be acquired. The project cost would total \$9.083 million with \$2.1 million for roadway construction and \$6.983 million for structures.

1.5.2. No Build Alternative: Alternative C

Under this alternative, no changes would be made to the project area, and current maintenance and landslide control measures would continue to be implemented as necessary. There would be no construction costs, but given current conditions, Alternative C would be more likely than the build alternatives to require partial road closure to repair slope failures. Alternative C does not meet the purpose and need of the proposed project. This alternative would not improve roadway reliability or reduce the risk of road closure due to landslides.

1.5.3. Alternatives Considered But Eliminated from Further Study

As discussed in Section 1.4, the following alternatives were considered but have been eliminated from further consideration.

Alternatives from the 1995 PSR

Alternative 1

Alternative 1 from the 1995 PSR would have required the realignment of US 101 in a tunnel constructed within the slope behind the slide area. This alternative was found to be impractical when the geotechnical study indicated that the tunnel would cross an active landslide mass. The original concept would have placed up to one-half of the tunnel in this unstable area, which is still considered to have the potential to fail. The VA study conducted in 2002 also considered a longer tunnel (almost 1 mile in length) in a different area in an attempt to bypass the unstable area. However, the area of the longer tunnel would have also had a significant potential for instability. Given the

general instability of the area and the remaining significant risk of failure with the longer tunnel, this alternative was also considered infeasible.

Alternative 2A

Alternative 2A from the 1995 PSR would have placed a soldier pile tieback wall on the east (upslope) side and slope stressing on the west (downslope) side. A soldier pile tieback wall is a wall constructed of vertically aligned steel beams (known as soldier piles) driven deep into the hillside. These beams are strengthened by the attachment of a steel strip (known as a tieback) through a drilled hole to the bedrock under the hillside behind the wall. This alternative was found to provide insufficient stability to the deep-seated slide area.

Slope stressing consists of drilling approximately 150 feet into the hillside, filling the hillside hole with concrete, attaching one end of a steel cable to the concrete, attaching the other end of the cable to a steel plate placed to stabilize the slope face, and then pulling the cable tight. The placement of a large number of steel plates would have been necessary to stabilize the hillside. The slope stressing would have resulted in unacceptable impacts due to the removal of old-growth redwoods and adverse effects to the natural environment along the roadway.

Alternative 2B

Alternative 2B from the 1995 PSR would have placed soldier pile tieback walls on both sides of the roadway. Initially, this alternative was not chosen because it was determined that it would not be capable of stabilizing or avoiding the deep-seated slide to the same extent as Alternative 3, described below.

Alternative 3

Alternative 3 from the 1995 PSR would have excavated a deep cut into the slope in an effort to construct the roadway behind the slide area. This alternative was determined to be a reasonable geotechnical solution to stabilize the slope. However, the deep excavation required would have extended far into Del Norte Redwoods State Park, resulting in an adverse impact to the natural and visual environment. In addition, this alternative would have required the disposal of a large amount of excavated material. Both the excavation into the adjacent park and the disposal of large amounts of excavated material were determined to have unacceptable impacts. Consequently, this alternative was not considered further and Alternative 2B emerged as the basis for further study.

Alternatives from the 2002 VA Study

The following alternatives, developed over the course of the 2002 VA study described in Section 1.4, were not selected. These alternatives were developed using Alternative 2B from the 1995 PSR as a baseline.

Alternative 1

Alternative 1 from the 2002 VA Study would have placed soldier pile tieback walls on both sides of the roadway throughout the project limits. This alternative was not selected due to the costs and environmental impacts of constructing walls throughout the project limits.

Alternative 3

Alternative 3 from the 2002 VA Study was a no build alternative that would have augmented the maintenance program in place at the time with a contingency plan to accelerate road damage repairs on the existing alignment in the event of a major failure.

Alternative A

Alternative A would have constructed four large retaining walls on the west side of the highway. The locations of the retaining walls in Alternative A would have required additional permanent transportation right-of-way from Del Norte Coast Redwoods State Park while Alternative B (proposed Alternative) required only temporary easements for the construction of some retaining walls. Under Section 4(f) of the Department of Transportation Act, transportation projects are required to avoid permanent take of park property whenever possible. Alternative A was subsequently eliminated from further study based on a written agreement with State Parks allowing temporary use of Park property during construction of the proposed.

1.6. Permits and Approvals Needed

1.6.1. Caltrans

Caltrans must approve this Initial Study (IS) in accordance with the California Environmental Quality Act (CEQA). Upon approval of this IS, Caltrans will file a Notice of Determination with the California State Clearinghouse that CEQA review has been completed for this project.

The CEQA review and coordination process with other State agencies has included the California Department of Fish and Game (CDFG), the California Coastal

Commission (CCC), and the Native American Heritage Commission (NAHC). In addition, because the proposed project would involve a temporary use of state park property, Section 4(f) of the Department of Transportation Act (4(f)) applies. Coordination with California State Parks consistent with 4(f) has occurred and an agreement has been reached for temporary occupancy (Appendix D).

1.6.2. Regulatory Permits

The following permits, reviews, and approvals would be required for project construction:

- Informal consultation with U.S. Fish and Wildlife Service
- Local Coastal Permit: Del Norte County (Grading Permit)
- Compliance with Caltrans' Statewide National Pollution Discharge Elimination System Permit
- State Historic Preservation Officer Concurrence
- Section 4(f) Temporary Occupancy Written Agreement with the California Department of Parks and Recreation (Acquired April 2007)



Chapter 2. Affected Environment, Environmental Consequences, and Avoidance, Minimization, and/or Mitigation Measures

As part of the scoping and environmental analysis conducted for the proposed project, the following environmental resources were considered, but no potential for adverse impacts to these resources was identified for the proposed project. Consequently, there is no further discussion regarding these CEQA Factors in this document.

- Growth — The proposed project is not capacity increasing, not proposed to support new or unplanned development, and is consistent with local and regional land use and transportation planning.
- Land Use – The proposed project would not change the existing land use of the project area and would be compatible with adjacent land uses.
- Community Impacts — No businesses or residences lie in the project area, and the project would not create a hardship on local businesses, residences, or emergency facilities.
- Emergency Services - A detailed Traffic Management Plan would be included as part of the Contractor's specification package to manage temporary construction delays due to one-lane traffic controls. Consistent with Caltrans policy, emergency vehicles would always be given priority passage through construction areas.
- Traffic and Transportation/Pedestrian and Bicycle Facilities - A detailed Traffic Management Plan would be included as part of the Contractor's specification package to manage temporary construction delays due to one-lane traffic controls.
- During construction, passage for bicyclists would be assured through the construction zone, and advance signing would be provided for motorists to watch for bicyclists. After construction completion, conditions for bicyclists and motorists using this section of US 101 would be considerably improved because of the consistent shoulder widths, vertical and horizontal curve improvements and the addition of 4-foot shoulders and protective guard railing.
- Farmlands/Timberlands — There are no farm or timberlands located within the project limits.

- Floodplain — The Floodplain Evaluation Report Summary (Caltrans 2006) found that because the project area is located on bluffs approximately 700 feet above the Pacific Ocean, the proposed project would not constitute a significant floodplain encroachment per 23 CFR 650.105.
- Geology/Soils/Seismic/Topography – The purpose of the proposed project is to stabilize the roadway to minimize impacts from the active landslides. Structures would be designed to withstand earth pressures caused by landslide movement due to seismic shaking or destabilization of upslope earth materials from wave action and erosion at the toe of the slope (*Preliminary Geotechnical Report, Last Chance Grade Correction and Tunnel Study* (Caltrans 2001b)).
- Paleontology — Analysis of the geologic features in the area indicated the project is not likely to encounter sensitive paleontology resources
- Hazardous Waste/Materials — The storage and handling of construction-related hazardous materials must be managed in accordance with applicable laws and regulations including the Fire Code, Hazardous Materials Business Plan requirements, and oil spill regulations that would minimize the risk from using hazardous materials during the project construction phase. If existing thermoplastic stripe is to be removed from the pavement surface as a separate operation, such as by grinding or sandblasting, the removed striping would be considered hazardous waste, and a remediation plan that complies with State and Federal standards would be developed and implemented.
- Air Quality - The purpose of the proposed project is to mitigate the landslide risks and hazards in the project area. The project would also expand the shoulder width in the project area. These types of activities are considered to be hazard elimination and shoulder improvement projects are ordinarily exempt from Federal transportation conformity requirements (40 CFR 93.126). This project is expected to generate suspended particulate matter from construction activities. Construction emissions would result from earthmoving and heavy equipment use. North Coast Unified Air Quality Management District Regulation 1, Rule 430 regulates particulate matter emissions due to earthmoving activities by requiring that projects take reasonable precautions to prevent particulate matter from becoming airborne.
- Noise and Vibration - Since no sensitive human receptors occur in the project area, the Noise Study for the proposed project (Illingworth & Rodkin 2006) focused on the vicinity of survey locations for marbled murrelet (State listed as endangered and Federally listed as threatened in Washington, Oregon, and

California) and northern spotted owl (Federally listed as threatened and a State species of concern). Neither species would be impacted by the project

- Wetlands & Waters of the United States - No USACE wetlands or other waters of the U.S. or CCC wetlands were identified in the biological study area (BSA); therefore, no impacts to these types of features would result from implementation of the proposed project. However, several avoidance and minimization measures are proposed to prevent discharge of material into non-jurisdictional waterways within and downstream of the BSA.
- Utilities – No utilities exist within the project limits.

2.1. Visual/Aesthetics

This section describes the visual setting of the project area as discussed in the *Visual Impact Assessment* (Haygood and Associates 2007), by Frederick Law Olmsted Jr., and is based on coordination with California State Parks and the California Coastal Commission.

2.1.1. Regulatory Setting

NEPA establishes that the Federal government use all practicable means to ensure all Americans safe, healthful, productive, aesthetically and culturally pleasing surroundings (42 USC 4331[b][2]). To further emphasize this point, the FHWA in its implementation of NEPA (23 USC 109[h]) directs that final decisions regarding projects are to be made in the best overall public interest taking into account adverse environmental impacts, including among others, the destruction or disruption of aesthetic values.

Likewise, CEQA establishes that it is the policy of the State to take all action necessary to provide the people of the State with “enjoyment of aesthetic, natural, scenic and historic environmental qualities” (California Public Resources Code [PRC] Section 21001[b]).

Section 30251 of the California Coastal Act establishes that “the scenic and visual qualities of coastal areas shall be considered and protected as a resource of public importance.” In addition, the Act states that “permitted development shall be sited and designed to protect views to and along the ocean and scenic coastal areas, to minimize the alteration of natural land forms, to be visually compatible with the character of surrounding areas, and, where feasible, to restore and enhance visual quality in visually degraded areas.”

2.1.2. Affected Environment

As part of the historic Redwood Highway designed by landscape architect Frederick Law Olmsted Jr., the visual quality along the Last Chance Grade alignment is high. As defined by Olmsted, this section has steep roadcuts on the east dropping steeply to the Pacific Ocean on the west. While trees have been allowed to grow along both sides of the road, they are predominantly trees younger than 75 years and still allow open vistas to the Pacific Ocean. There are no public facilities such as sidewalks, or decorative landscaping within the project limits.

The Visual Impact Analysis was conducted to measure the visual quality of the existing landscape. Thirteen representative views of the project area were analyzed to represent the differences in the visual landscape. These 13 views were evaluated for three criteria: vividness, intactness, and unity. These three criteria take into account how distinctive a view is, how disturbed by external elements a view is, and how the view fits into the landscape as a whole. The locations of the 13 representative views are depicted in Figure 4. Four of the 13 representative views were selected as key views. These four key views depict selected viewsheds experienced by northbound and southbound motorists and were used to evaluate the effects of the project on the existing visual landscape in the project area.

Visual simulations using these key views depicting the build alternative with a range of aesthetic treatments were presented to California State Parks, California Coastal Commission, and Del Norte County, in October of 2006. Based on agency recommendations, Caltrans would sandblast the safety barrier at the base of the retaining walls to the east of the highway for a dull finish, and match vertical columns to the color of old-growth redwood bark. Figures 5 through 8 depict visual simulations of the proposed project.

2.1.3. Impacts

Because US 101 in the project area is designated as a scenic highway by the State of California, it is important to assess the impacts of the project on the elements that make this portion of US 101 a scenic highway. The Caltrans Landscape Architecture Program defines the elements that make a highway scenic with the following statement:

A highway may be designated scenic depending upon how much of the natural landscape can be seen by travelers, the scenic quality of the landscape, and the extent to which development intrudes upon the traveler's enjoyment of the view.

In the context of this statement, no long-term adverse impacts would be created by installing retaining walls along the existing alignment. One Douglas fir tree could potentially be removed (see Figure 8), but no redwood trees would be removed. The proposed project would construct retaining walls in areas where they did not previously exist, the hillside stabilization that the walls would provide would significantly reduce the number of intrusive visual elements, such as earthmoving equipment, temporary barriers and other maintenance equipment, necessary for the frequent maintenance of the project area. Further, the retaining walls would be designed consistent with existing retaining walls located elsewhere along US 101 in Redwood National and State Parks. As shown in Figure 7 (*Wall to the North*), the surfaces of the retaining walls lend themselves to the forces of natural weathering.

The proposed project is expected to have positive visual effect through the general improvement of the visual character of the roadway. Specifically, the replacement of highly contrasting white concrete K-rail with the more visually open metal beam guardrail options proposed would improve views of the Pacific Ocean from either lane of US 101. Access to pullouts offering ocean views in the project area would not be permanently affected by the project, though during project construction they may be inaccessible due to equipment staging or storage.

Temporary impacts would occur during construction of the project due to the removal of existing vegetation and the staging of equipment and materials. Passing vehicles would observe the storage of heavy equipment, dirt, and other materials required for project construction. Erosion control measures such as straw bales and erosion control fabric would also be visible from the roadway. During construction, local pullouts may not be available for public use. Temporary visual impacts associated with staging are part of the general construction landscape and do not require mitigation.

Temporary traffic signage would be used to direct motorists through the construction site.

2.1.4. Avoidance, Minimization, and/or Mitigation Measures

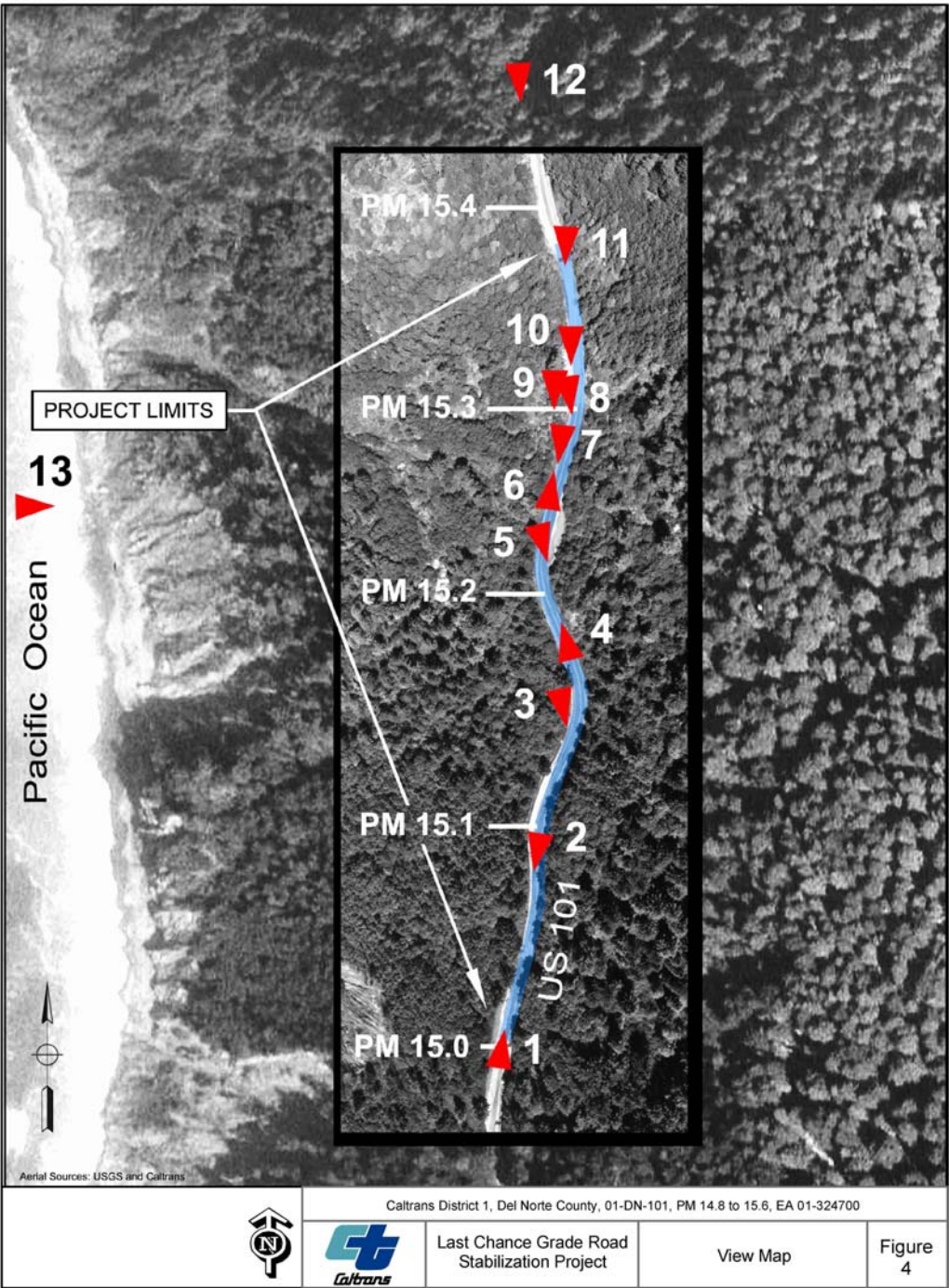
With the following recommendations from the Landscape Architect, the project would not create adverse impacts to the visual quality within the project area:

- Revegetation would be performed to reduce long-term visual impacts created by denuding construction staging areas within Caltrans right-of-way and in temporary State Parks construction easements. Native species would be planted on affected slopes where conditions allow. The revegetation plan would be

developed by the project biologist, project revegetation specialist, project architectural historian, and project landscape architect.

- See-through railing would be used to improve motorists' views of the Pacific Ocean (Figure 8).

Figure 4 View Map



URS Corporation L:\Projects\Last_Chance_Grade\MXD\Current Working Documents\Map_View_Map.mxd Date: 1/19/2007 2:53:08 PM Name: akelleo

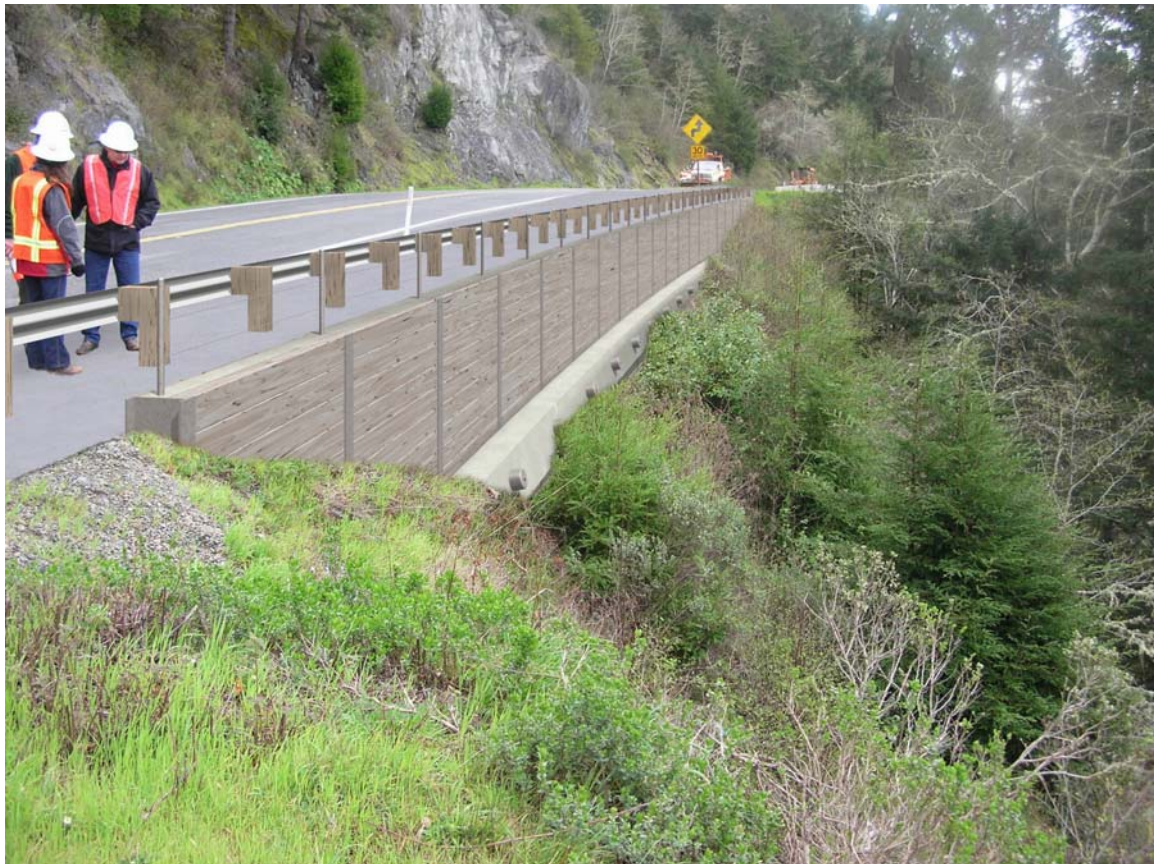
Figure 5 Photosimulations View 3



Existing Retaining Wall North of the Project



View 3 Without Project



View 3 with Simulated Retaining Wall

Figure 6 Photosimulations View 4



View 4 Without Project



View 4 with Simulated Retaining Wall

Figure 7 Photosimulations View 5



Existing Wall North of the Project.



View 5 Without Project



Simulation of View 5 with Retaining Wall

Figure 8 Photosimulations View 10



View 10 Without Project.



View 10 with a See-through Safety-rail and Retaining Wall Simulation.

2.2. Cultural Resources

This section summarizes the findings of the *Archaeological Survey Report* (ASR) (URS 2007) and *Historic Resources Evaluation Report* (HRER) (Caltrans 2001a) prepared for the proposed project.

2.2.1. Regulatory Setting

“Cultural resources” as used in this document refers to all historical and archaeological resources, regardless of significance. The following laws and regulations apply to cultural resources.

2.2.1.1. Federal

The National Historic Preservation Act (NHPA) of 1966, as amended, sets forth national policy and procedures regarding historic properties, defined as districts, sites, buildings, structures, and objects included in or eligible for the National Register of Historic Places (NRHP). Section 106 of the NHPA requires Federal agencies to account for effects of their undertakings on such properties and to allow the Advisory Council on Historic Preservation the opportunity to comment on those undertakings, following regulations issued by the Advisory Council on Historic Preservation (36 CFR 800). On January 1, 2004, a Section 106 Programmatic Agreement (PA) among the Advisory Council, FHWA, SHPO, and Caltrans went into effect for Caltrans projects, both State and local, with FHWA involvement. The PA takes the place of the Advisory Council’s regulations, 36 CFR 800, streamlining the Section 106 process and delegating certain responsibilities to Caltrans.

Historic properties are also covered under Section 4(f) of the U.S. Department of Transportation Act, which regulates the “use” of land from historic properties.

2.2.1.2. State

Historical resources are considered under CEQA as well as PRC Section 5024.1, which established the California Register of Historical Resources (CRHR). PRC Section 5024 requires State agencies to identify and protect State-owned resources that meet the NRHP listing criteria. It further specifically requires Caltrans to inventory State-owned structures in its rights-of-way. Sections 5024(f) and 5024.5 require State agencies to provide notice to and consult with the SHPO before altering, transferring, relocating, or demolishing State-owned historical resources that are listed on or are eligible for inclusion in the NRHP or are registered or eligible for registration as California Historical Landmarks.

2.2.2. Affected Environment

Background research and an archaeological survey were conducted to identify any potential archaeological resources located in the project limits. The Area of Potential Effects (APE) for the project was established as a corridor of land ranging between approximately 82.5 feet and 395 feet wide within the limits of the proposed project. The APE encompasses the maximum limits of all proposed construction activities, including both existing and proposed right-of-way and all temporary construction easements and staging areas. All accessible portions of the APE were subjected to intensive pedestrian survey on May 3, 2006. Inaccessible areas, including areas with steep grades (averaging from 30 to 60 percent) and dense vegetation and brush, were not surveyed.

A records search was conducted at the North Coastal Information Center at the Yurok Tribal Headquarters in Klamath on March 2, 2006. No recorded resources were identified in the project APE, though one known cultural resource was identified outside the APE. The archaeological survey did not identify any previously unrecorded prehistoric and/or historic archaeological resources.

Additional background research indicated that the project limits are within a portion of US 101 that has been evaluated as being eligible for listing in the National Register of Historic Places (NRHP) (Clement 2001). This roadway segment, listed as the Redwood Highway through the Del Norte Coast Redwoods State Park from PM 13.3 to 22.58, would qualify as a historic landscape district at the State level of significance as the design of a master landscape architect (Frederick Law Olmsted, Jr.), as an engineering achievement, and for its aesthetic qualities. The roadway segment was also evaluated using criteria outlined in PRC Section 5024.1 and was determined to be a historical resource for the purposes of CEQA (Clement 2001). The barriers and retaining walls associated with Last Chance Grade would conform with the basic integrity of design of the historical resource (Caltrans 2001a).

A records search of the Sacred Lands File was conducted on February 24, 2006, by the Native American Heritage Commission (NAHC). According to the NAHC, no sites within the Sacred Lands File are located within the immediate Project area. The NAHC also provided a list of 16 Native American individuals and organizations that were contacted for information about the project area or concerns about project effects. Two respondents requested that any cultural artifacts found during project activities be returned to their respective rancherias, and one organization (the Elk

Valley Rancheria) requested that a cultural monitor be present at their discretion. No other issues or concerns were raised.

2.2.3. Impacts

The roadway within the project limits has been nominated as eligible for inclusion in the National Register of Historic Places (NRHP), and the barriers and retaining walls associated with Last Chance Grade would conform with the basic integrity of design of the historic resource. The project would improve existing barriers and install retaining walls on the east and west sides of US 101 but would not adversely impact the eligibility of the roadway for inclusion in the NRHP (Caltrans 2001a).

Installation of retaining walls would not adversely affect this historic landscape district because the proposed retaining walls would not adversely impact the highway's current relationship to the natural environment, its primary character-defining feature. Olmsted designed the road to allow motorists to experience nature to the greatest extent possible, while using a safe and navigable road. This effect was achieved through a philosophy of "lying lightly on the land" (Clement 2001), which refers to avoiding the destruction of trees and modification of the landscape. While this segment of US 101 has been periodically maintained and upgraded to increase safety and circulation, the road "retains basic integrity of design, in that the alignment and grade remain, if somewhat altered by widening and minor curve corrections" (Clement 2001). Several alternatives were considered (see Section 1.5.5). By minimizing the addition of constructed features to the existing historic landscape, the project would neither significantly widen the existing roadway nor compromise the intimate relationship of the road with the surrounding natural environment.

Aside from the historic landscape district described above, no other cultural resources were identified; therefore, no impacts to other cultural resources are expected to occur as a result of the project. However, should cultural resources be encountered during construction, the avoidance and minimization measures described in Section 2.4.4 would be employed.

Because the Last Chance Grade roadway is eligible for the NRHP, Section 4(f) would apply to the roadway and surrounding park resources. While the project would require minor adjustments to and repaving of the historic road surface, the aesthetic integrity and location of the alignment would remain intact, so that the characteristics and features that render it eligible for inclusion in the NRHP would not be adversely affected for purposes of Section 4(f) (Mara Feeney and Associates 2007). Caltrans

will seek a 4(f) de minimis finding based on State Historic Preservation Officer (SHPO) concurrence with a “Finding of No Adverse Effect” on the historic resource.

2.2.4. Avoidance, Minimization, and Mitigation Measures

Although no potentially significant cultural resources impacts have been identified, undiscovered archeological resources could be encountered during construction. If cultural materials are discovered during construction, all earth-moving activity within and around the immediate discovery area would be diverted until a qualified archaeologist can assess the nature and significance of the find.

If human remains are discovered, California Health and Safety Code Section 7050.5 states that further disturbances and activities shall cease in any area or nearby area suspected to overlie remains, and the County Coroner contacted. Pursuant to PRC Section 5097.98, if the remains are thought to be Native American, the coroner would notify the Native American Heritage Commission who would then notify the Most Likely Descendent. At this time, the person who discovered the remains would contact the Caltrans District Archaeologist so that they may work with the Most Likely Descendent on the respectful treatment and disposition of the remains. Further provisions of PRC 5097.98 are to be followed as applicable.

2.3. Water Quality and Storm Water Runoff

This section discusses water quality and storm water runoff in the proposed project area as described in the *Draft Hydrology and Floodplain/Water Quality and Storm Water Runoff* report (WRECO 2006).

2.3.1. Regulatory Setting

2.3.1.1. Federal and State

Section 402 of the Clean Water Act (CWA) establishes the National Pollutant Discharge Elimination System (NPDES) permit system for the discharge of any pollutant (except dredge or fill material) into waters of the United States. To ensure compliance with Section 402, the SWRCB has developed and issued an NPDES Statewide Storm Water Permit to regulate storm water discharges from all Caltrans’ rights-of-way, properties, and facilities. The permit regulates both storm water and non-storm water discharges during and after construction.

In addition, the SWRCB issues the Statewide Permit for all Caltrans construction activities of 1 acre or greater, or a number of smaller projects that are part of a common plan of development with the total area exceeding 1 acre, or projects that have the potential to significantly impair water quality. Caltrans projects subject to the Statewide Storm Water Permit require a Storm Water Pollution Prevention Plan (SWPPP).

The California Environmental Protection Agency has delegated administration of the Federal NPDES program to the SWRCB and nine regional boards. This project is located within the jurisdiction of the SWRCB and the North Coast Regional Water Quality Control Board.

Subject to Caltrans review and approval, the contractor prepares the SWPPP. The SWPPP identifies construction activities that may cause pollutants in storm water and measures to control these pollutants. Because the SWPPP has not yet been prepared, the following discussion focuses on anticipated pollution sources or activities that may cause pollutants in the storm water discharges.

Additional laws regulating water quality include the Porter-Cologne Water Quality Act, Safe Drinking Water Act, and Pollution Prevention Act. State water quality laws are codified in the California Water Code and California Health and Safety Code, as well as in California Fish and Game Code Sections 5650 through 5656.

2.3.2. Affected Environment

The project area experiences heavy rainfall with a mean annual between 70 to 100 inches.

The only receiving surface water body for this project is the Pacific Ocean. Potential and existing beneficial uses for the Pacific Ocean, according to the North Coast Regional Water Quality Control Board, include industrial service supply; industrial process supply; navigation; water contact recreation; non-contact water recreation; commercial and sport fishing; preservation of areas of special biological significance; wildlife habitat; rare, threatened, or endangered species; marine habitat; migration of aquatic organisms; spawning, reproduction, and/or early development; shellfish harvesting, and aquaculture. Potential and existing beneficial groundwater uses in the North Coast region include municipal and domestic supply, agricultural supply, industrial service supply, industrial process supply, aquaculture, and Native American culture. The Native American culture beneficial use is unique in the North Coast

region and is designated for water bodies with uses of water that support the cultural and/or traditional rights of indigenous people.

2.3.2.1. Receiving Surface Water Bodies

The receiving surface water body is the Pacific Ocean, which lies west of the project site by approximately 0.23 mile.

Seven watercourses are located within the project construction limits. These cross culverts convey storm water from the east to the west, down the hill, and eventually discharge to the Pacific Ocean. These seven watercourses are identified by mile markers in Table 2-1, and their locations are depicted in Figure 9.

Table 2-1 Culvert Locations

Watercourse	Mile Marker
1	14.96
2	15.01
3	15.06
4	15.20
5	15.34
6	47 feet south of 15.40
7	15.40

2.3.3. Impacts

The water quality and storm water runoff impact analysis was based on an evaluation of historical data, project technical reports, and field reviews. The impact analysis assumes that any project-related construction would conform to county building standards, grading permit requirements, and erosion control requirements.

The FHWA has found that street and highway storm water runoff can, in some instances, adversely affect receiving water quality. The nature of these impacts depends on the uses and flow rate or volume of the receiving water, rainfall characteristics, and street or highway characteristics. In general, heavy metals associated with vehicle tire and brake wear, oil and grease, and air emissions are the primary toxic pollutants associated with transportation corridors. Common pollutants that can be found in storm water runoff include phosphorus, nitrogen, total copper, dissolved copper, total lead, dissolved lead, total zinc, dissolved zinc, sediments, and general metals.

Figure 9 Nonjurisdictional Drainages in the Project Area (1 of 2)

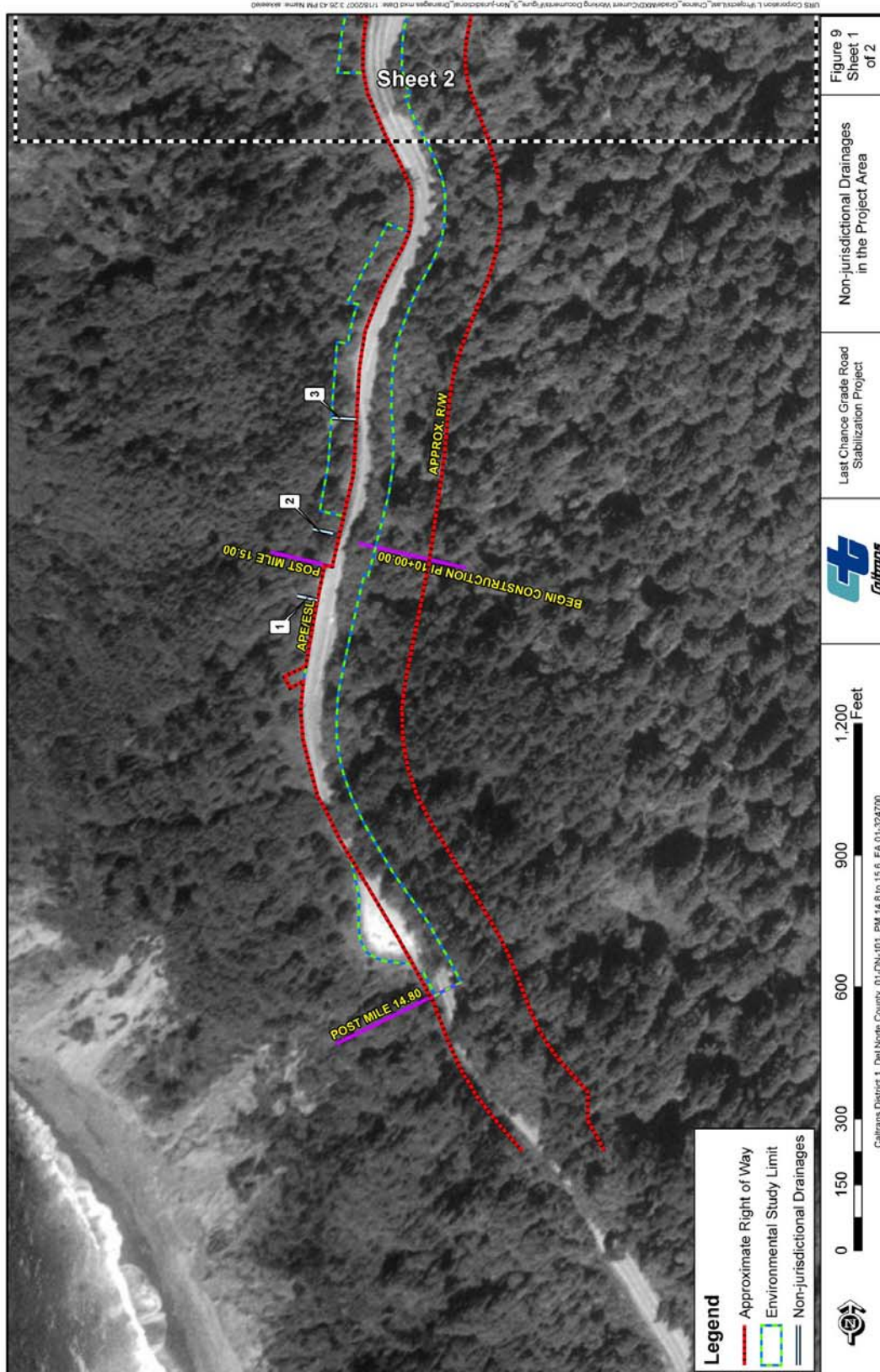
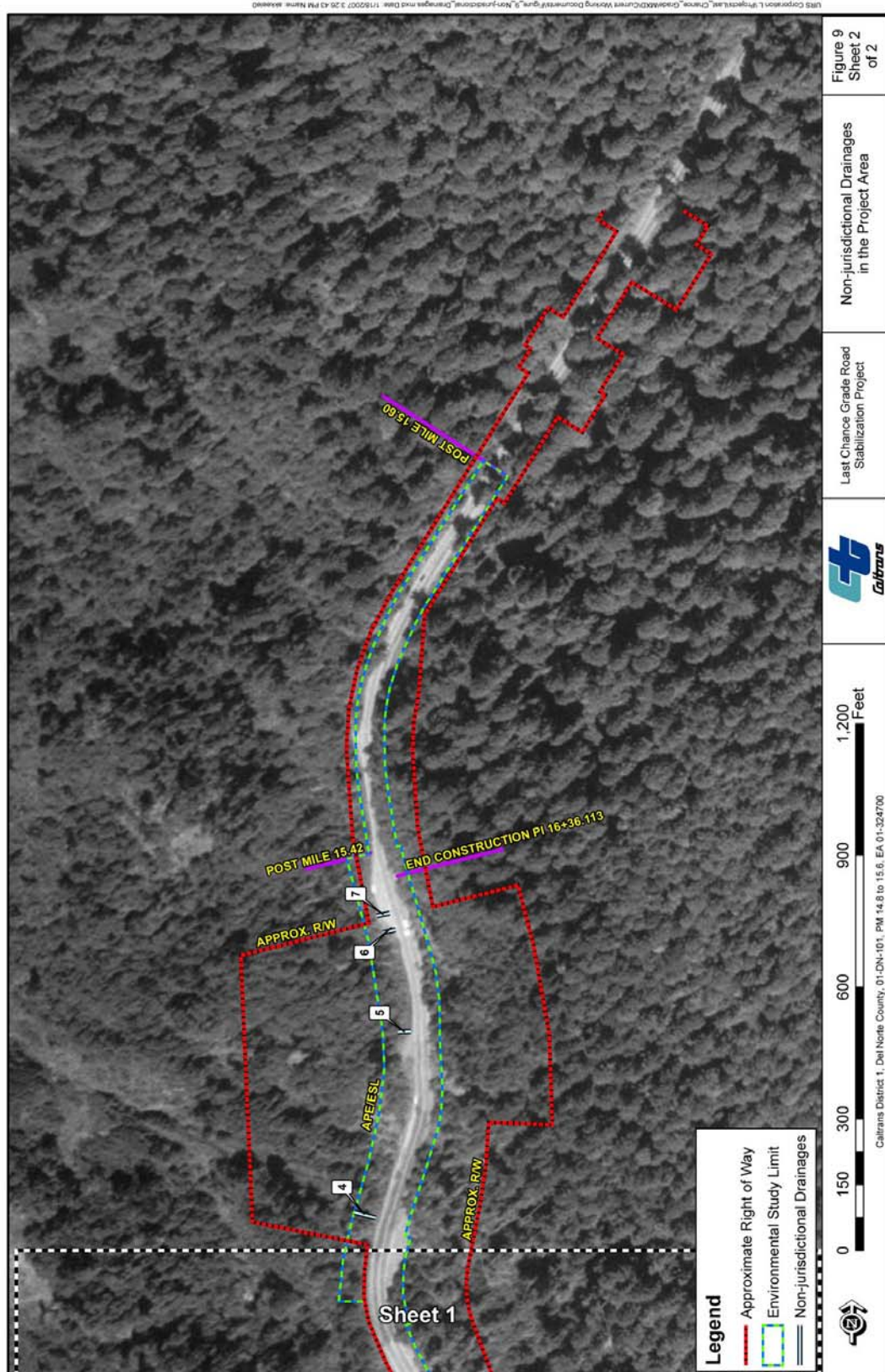


Figure 9 Nonjurisdictional Drainages in the Project Area (2 of 2)



2.3.3.1. Project Impacts

Project operations would include excavation for the proposed roadway alignment and the construction of the new roadway, resulting in additional impervious surface area. The potential for water quality impact would be related to the amount of new impervious surface area available for contact with storm water runoff that could potentially be introduced into the waterways. The project would result in a slight increase in impervious area, which would, in turn, result in additional runoff from the minor roadway realignment. The existing roadway consists of two 12-foot lanes and shoulder widths that vary between 1 foot and 8 feet. The existing paved surface is approximately 1.46 acres. The proposed project would widen the roadway to provide 8-foot shoulders on the southbound direction at the locations of proposed retaining walls, and 4-foot shoulders at the remaining locations.

The project would create approximately 0.23 acre of new impervious area and convert approximately 0.10 acre of old impervious area to pervious area. The total paved area within the project limits would be 1.59 acres. This corresponds to an increase in impervious area of 0.13 acre, or a 9 percent increase.

The estimated storm water runoff for the existing condition is approximately 3.0 cubic feet per second (cfs). The estimated storm water runoff is approximately 3.3 cfs. This corresponds to an increase in storm water runoff of 10 percent for the project.

The proposed project includes portions of roadway widening and is not expected to significantly alter the existing drainage patterns in the area. Drainage conveyance systems will be designed to manage the increase in storm water runoff as a result of the increase in impervious surface.

The construction activities necessary for the proposed project may have an impact on the water quality of the waterways. Fueling or maintenance of construction vehicles could occur in the project area during construction and there would be a risk of accidental spills or releases of fuels, oils, or other potentially toxic materials. An accidental release of these materials may pose a threat to water quality if contaminants enter storm drains and the waterways in the area. The magnitude of the impact from an accidental release would depend on the amount and type of material spilled. Commonly used construction activity Best Management Practices (BMPs) would be required to minimize any potential impacts.

Project long-term impacts would be minimal. The proposed project would maintain the existing drainage pattern. The retaining walls would stabilize the slopes and reduce potential erosion from landslides and reduce debris from entering storm water runoff running down the slopes. Any ground movements generated from earthquakes results in landslides and debris flow. The proposed retaining walls would help stabilize the hill slopes and reduce the potential for debris and landslides as well as minimize or reduce sediments from reaching the receiving waters, in this case, the Pacific Ocean.

2.3.4. Avoidance, Minimization, and/or Mitigation Measures

The overall minimization measures for water quality impacts are conditions of the National Pollution Discharge Elimination System permit and the local coastal development permit. Implementation details for these measures would be developed and incorporated into the project design and operations prior to project construction. With proper implementation of these measures, short-term or temporary construction-related water quality impacts would be avoided or minimized.

2.3.4.1. Spills of Hazardous Materials

Spill prevention and control measure BMPs would be incorporated into the Storm Water Pollution Prevention Plan. The Caltrans *Construction Site Best Management Practices Manual* (Caltrans 2003b) contains BMP WM-4, “Spill Prevention and Control.” BMP WM-4 lists example standards and specifications for spill prevention and control including employee education, proper storage and good housekeeping practices, and covering and protecting spills from storm water run-on during rainfall to avoid compromising cleanup activities. Procedures and practices presented in BMP WM-4 are general, and the Contractor will identify appropriate practices for the specific materials used or stored on-site.

2.3.4.2. Permanent Water Quality Control Measures

The Caltrans NPDES permit stipulates that permanent measures to control pollutant discharges must be considered and implemented for all new or reconstructed facilities. Permanent control measures to reduce pollutants in storm water runoff from the roadway include the measures described below. These control measures would be located in the Caltrans right-of-way. Such measures reduce the suspended particulate loads (and thus pollutants associated with the particulates) entering waterways. The measures should be incorporated into the final engineering design or landscape design of the project and should take into account expected runoff from the roadway. In addition, the NPDES permit also stipulates that an operation and maintenance

program be implemented for the permanent control measures. These water quality control measures include BMPs for design pollution prevention, treatment, and construction site management.

Design Pollution Prevention BMPs

Many design elements that are traditionally part of the highway, drainage, and landscape design for a project are considered beneficial to pollution prevention. In addition, the following elements will be considered with respect to the potential water quality impacts identified.

- Consideration of downstream effects related to potentially increased flow
- Preservation of existing vegetation
- Slope/surface protection systems (the application of the following control measures may be necessary)
 - Vegetated surfaces
 - Hard surfaces

Treatment BMPs

Selection of treatment BMPs would depend on the types of pollutants targeted for removal. Common pollutants that can be found in storm water runoff include phosphorus, nitrogen, total copper, dissolved copper, total lead, dissolved lead, total zinc, dissolved zinc, sediments, and general metals. Typical treatment BMPs that are approved by the SWRCB include the following:

- Biofiltration strips/swales
- Infiltration devices
- Detention devices
- Traction sand traps
- Dry weather flow diversion
- Gross solids removal devices
- Media filters
- Multi-chamber treatment train
- Wet basins

The use of infiltration basins and detention devices would be preferred but is not feasible due to the natural land characteristics. Biofiltration systems are also recommended but may not be possible with the steep terrain. The feasibility of using

biofiltration systems as treatment BMPs will be evaluated at a later phase in the project.

Construction Site BMPs

Erosion control measures would be applied to all exposed areas during construction. Erosion impacts can be minimized with the implementation of soil stabilization practices, such as erosion control blankets or preservation of existing vegetation. Approved erosion control BMPs are described in the Caltrans Project Planning and Design Guide. Temporary erosion control and water quality measures would be defined in detail in the Erosion Control and Water Pollution Control design sheets prepared for the project.

2.4. General Biological Setting

The information in this section is summarized from the *Natural Environment Study* (NES) (URS 2006b) prepared for the proposed project.

The biological study area (BSA) encompasses US 101 within the project limits, including the existing and proposed right-of-way and temporary construction easements. The BSA is within Del Norte Coast Redwoods State Park and Redwood National Park, which is home to 45 percent of the remaining groves of coastal redwood (*Sequoia sempervirens*) trees. In addition, the park preserves grassland prairie, cultural resources, and 37 miles of pristine coastline.

The BSA is surrounded by stands of old-growth redwood forest to the north and east. Vegetation in the BSA and below the highway is composed of relatively open canopy Douglas fir (*Pseudotsuga menziesii*) stands with intermittent redwoods (*Sequoia sempervirens*). Portions of the area have an understory of alder (*Alnus* sp.) and coffeeberry (*Rhamnus* sp.), while the dense herbaceous layer is dominated primarily by swordfern (*Polystichum* spp.), cow parsnip (*Heracleum lanatum*), and elderberry (*Sambucus* sp.). Wildlife species in the immediate area include black bear (*Ursus americanus*), Roosevelt elk (*Cervus Canadensis Canadensis*), deer (*Odocoileus virginianus*), coyote (*Canis latrans*), mountain lion (*Felis concolor*), bobcat (*Lynx rufus*), and skunk (*Mephitis mephitis*), among others.

The following sections address wetlands, plants, animals, threatened and endangered species, and invasive species.

2.5. Plant Species

The information in this section is from the NES for the proposed project. This section discusses all the other special-status plant species, including non-listed California Native Plant Society (CNPS) rare and endangered plants.

2.5.1. Regulatory Setting

The USFWS and CDFG share regulatory responsibility for the protection of special-status plant species. Special-status species are selected for protection because they are rare and/or subject to population and habitat declines. Special status is a general term for species that are afforded varying levels of regulatory protection. The highest level of protection is given to *threatened and endangered* species, which are species that are formally listed or proposed for listing as *endangered* or *threatened* under the Federal Endangered Species Act (FESA; 16 USC 1531 et seq. and 50 CFR Part 402) and/or the California Endangered Species Act (CESA; California Fish and Game Code Section 2050 et seq.). See Section 2.16 for detailed information regarding *threatened* and *endangered* species. Caltrans projects are also subject to the Native Plant Protection Act (California Fish and Game Code Sections 1900–1913) and CEQA (PRC Sections 21000–21177).

2.5.2. Affected Environment

Records from the California Natural Diversity Data Base (CNDDB; CDFG 2006) and the CNPS Inventory (CNPS 2006) and species lists provided by the USFWS indicate that 13 special-status species have the potential to occur within the BSA based on available habitat and range of elevation (787 to 1,115 feet). No surveys for special-status plant species have been completed within the BSA. Floristic surveys following the CDFG protocol shall be conducted prior to project implementation in spring and summer 2007 to assess the presence of, or any project-related impacts to, these species. The 13 species with potential to occur in the BSA are described below.

Yellow-Tubered Toothwort

Yellow-tubered toothwort (*Cardamine nuttallii* var. *gemmata*) is a CNPS List 1B.3 species. This species is a perennial herb in the Brassicaceae family. It is found in North Coast coniferous forest, yellow pine forest, and mixed evergreen forest with an elevation range between 328 and 2,290 feet. This species typically occurs in serpentine soils within coniferous forests. Yellow-tubered toothwort typically blooms from April to May.

Meadow Sedge

Meadow sedge (*Carex praticola*) is a CNPS List 2.2 species. This species is a perennial herb in the Cyperaceae family, found in meadows and seeps between the elevations of 0 and 10,500 feet. The meadow sedge blooming period is between May and July.

Waldo Buckwheat

Waldo buckwheat (*Eriogonum pendulum*) is a CNPS List 2.2 species. This species is a perennial herb in the Polygonaceae family. It is found in lower and upper montane coniferous forests, often within serpentine soils between the elevations of 750 and 3,300 feet. This species blooms from August through September.

Henderson's Fawn Lily

Henderson's fawn lily (*Erythronium hendersonii*) is a CNPS List 2.3 species. This species is a perennial herb in the Liliaceae family, found in lower montane coniferous forests between the elevations of 980 and 5,250 feet. The blooming period for this species is between April and July.

Howell's Fawn Lily

Howell's fawn lily (*Erythronium howellii*) is a CNPS List 1B.3 species. This species is a perennial herb in the Liliaceae family, found occasionally in serpentine soils within lower montane coniferous forest and North Coast coniferous forest habitats between the elevations of 656 and 3,750 feet. The blooming period for this species is from April to May.

Coast Fawn Lily

Coast fawn lily (*Erythronium revolutum*) is a CNPS List 2.2 species. This species perennial herb is in the Liliaceae family and is found in bogs and fens, broadleaved upland forest, North Coast coniferous forest and streambank habitats between the elevations of 0 and 3,500 feet. The blooming period for this species is from March to June.

Coast Range Lomatium

Coast Range lomatium (*Lomatium martindale*) is a CNPS List 2.3 species. This species is a perennial herb in the Apiaceae family and is found in coastal bluff scrub, lower montane coniferous forests and meadow, and seep habitats ranging in elevation from 790 to 10,000 feet. The blooming period for this species is between May and August.

Indian-Pipe

Indian-pipe (*Monotropa uniflora*) is a CNPS List 2.2 species. This species is a perennial herb in the Ericaceae family and is found in broadleaved upland forest and North Coast coniferous forest habitats between the elevations of 30 and 600 feet. The blooming period for this species is between June and July.

Wolf's Evening Primrose

Wolf's evening primrose (*Oenothera wolffii*) is a CNPS List 1B.1 species. This species is a perennial herb in the Onagraceae family found in the following habitats: coastal bluff scrub, coastal dunes, coastal prairie, and sandy soils within lower montane coniferous forest. Wolf's evening primrose occurs between 10 to 7,200 feet. The blooming period for this species is between May and October.

Seacoast Ragwort

Seacoast ragwort (*Senecio bolanderi* var. *bolanderi*) is a CNPS List 2.2 species. This species is a perennial herb in the Asteraceae family. Habitats for this species include coastal scrub and North Coast coniferous forest ranging in elevations from 90 to 2,000 feet. The blooming period for seacoast ragwort is from June to July.

Maple-Leaved Checkerbloom

Maple-leaved checkerbloom (*Sidalcea malachroides*) is a CNPS List 1B.2 species. This species is a perennial herb in the *Malvaceae* family. Maple-leaved checkerbloom is known to occur in the following (often disturbed) habitats: broadleaved upland forest, coastal prairie, coastal scrub and North Coast coniferous forest ranging in elevations from 5 to 2,000 feet. The blooming period for this species is April through August.

Siskiyou Checkerbloom

Siskiyou checkerbloom (*Sidalcea malviflora* ssp. *patula*) is a CNPS List 1B.2 species. This species is a perennial herb in the *Malvaceae* family. Siskiyou checkerbloom is known to occur in coastal prairie, North Coast coniferous forest and less frequently in coastal bluff scrub. Elevations for this species range from 50 to 2,000 feet. The blooming period is from May to June.

Coast Checkerbloom

Coast checkerbloom (*Sidalcea oregana* ssp. *eximia*) is a CNPS List 1B.2 species. This species is a perennial herb in the *Malvaceae* family. Coast checkerbloom occupies lower montane coniferous forest, meadow and seeps, and North Coast

coniferous forests ranging in elevation from 15 to 4,500 feet. The blooming period for this species is between June and August.

2.5.3. Impacts

Potential impacts to special-status plants could include permanent, temporary, and indirect effects. Permanent impacts include loss or degradation of habitat due to roadway development. Temporary impacts, occurring only during the construction period, include increased erosion and vehicle disturbances of habitat. Indirect effects are those that may result after implementation of the project, such as altered hydrology, introduction of invasive non-native species, or reduced genetic exchange. Impacts to special-status plants have not been quantified at this time, but will be assessed after focused surveys are completed for the BSA during the Spring and Summer of 2007. Results of these surveys will be included in the final environmental document.

2.5.4. Avoidance, Minimization, and/or Mitigation Measures

The following measures shall be implemented during construction to minimize impacts to special-status plant species:

- Temporary erosion control devices would be installed on slopes where erosion or sedimentation could degrade sensitive biological resources.
- All temporary disturbance areas would be revegetated with appropriate combinations of native species unique to the habitats found in the BSA upon completion of construction.
- All construction personnel working in the BSA would be required to attend environmental awareness training. At a minimum, the training would include: (1) an overview of the regulatory requirements for the project, (2) descriptions of the special-status species potentially occurring in the BSA and the importance of these species and their habitats, (3) the general measures that are being implemented to minimize environmental impacts, and (4) the boundaries within which equipment and personnel would be allowed to work during construction. Caltrans would maintain a record of all workers that have completed the program.
- All temporary fill and construction debris would be removed from the BSA after completion of construction activities.
- Invasive species would be removed in the BSA where feasible.

- Upon completion of the project, all areas that have been temporarily affected by the project shall be restored to original site conditions, with the exception of non-natives. All vegetation removal would be minimized to the extent feasible for performing the proposed demolition and construction. Revegetation efforts shall include plants only from the immediate vicinity to maintain genetic integrity.

2.6. Animal Species

The information in this section is from the NES for the proposed project.

2.6.1. Regulatory Setting

Many State and Federal laws regulate impacts to wildlife. The U.S. Fish and Wildlife Service (USFWS), the National Marine Fisheries Service (NOAA Fisheries), and the California Department of Fish and Game (CDFG) are responsible for implementing these laws. This section discusses potential impacts and permit requirements associated with wildlife not listed or proposed for listing under CESA or FESA. Species listed or proposed for listing as threatened or endangered are discussed in Section 2.16. All other special-status animal species are discussed here, including CDFG fully protected species and species of special concern, and USFWS or NOAA Fisheries candidate species.

Federal laws and regulations pertaining to wildlife include the following:

- National Environmental Policy Act (NEPA)
- Migratory Bird Treaty Act
- Fish and Wildlife Coordination Act

State laws and regulations pertaining to wildlife include the following:

- California Environmental Quality Act (CEQA)
- Sections 1601 – 1603 of the California Fish and Game Code
- Section 4150 and 4152 of the California Fish and Game Code
- California Coastal Act

2.6.2. Affected Environment

Review of the CNDDDB database and USFWS species lists indicate that three special-status species have the potential to occur within the BSA based on available habitat

and known species ranges. The species with potential to occur in the BSA are described below.

Northern Spotted Owl

The northern spotted owl (*Strix occidentalis*) is Federally listed as threatened and a State species of concern. This species is discussed in more detail in Section 2.16.

Osprey

The osprey (*Pandion haliaetus*) is a State species of special concern. The osprey breeds in Northern California from the Cascade Ranges south to Lake Tahoe and along the North Coast south to Marin County in forested areas near fish-bearing waters (CDFG 2005). Ospreys forage primarily in open clear waters (salt or fresh) for fish but will also take reptiles, amphibians, and birds. Nests are composed of sticks typically atop a large tree or snag, but occasionally ospreys will nest on a cliff or on the ground (CDFG 2005). No recorded occurrences of osprey within a 10-mile radius from the BSA are documented in the CNDDDB (CDFG 2006). Habitat for the osprey is marginal in the BSA due to its exposure to strong offshore winds. In addition, the osprey was not detected during surveys for marbled murrelet and northern spotted owl in 2006. Therefore, this species is not expected to occur in the BSA.

Red Tree Vole

The California red tree vole (*Arborimus pomo*) is a State species of special concern. This species is found along the Pacific coastal lowlands in Oregon and Northern California, and occurs only in coastal coniferous forests consisting of Douglas fir, Grand fir, Western hemlock, and/or Sitka spruce (Williams 1986). Generally, large trees are preferred, but smaller trees will be inhabited when large trees are not available (Williams 1986). The red tree vole lives above ground within the forest canopy and feeds almost exclusively on the resin ducts of Douglas fir needles, but will also feed on the needles, buds, and tender bark of grand fir, hemlock, and spruce (Williams 1986). No recorded occurrences of red tree vole within a 10-mile radius of the BSA are documented in the CNDDDB (CDFG 2006). However, there is potential for this species to occur in the BSA. No surveys for this species have been completed for the BSA.

Del Norte Salamander

The Del Norte salamander (*Plethodon elongatus*) is a State species of concern. Found along the coast in northwest California from near Orick, Humboldt County, east to near the Seiad Valley, Siskiyou County, and Salyer, Trinity County, and north into southwest Oregon. This species is strongly associated with moist talus in humid

shaded and closed-canopy coastal forests of mixed hardwoods and conifers, but is also found in rock rubble of old riverbeds, and under bark and logs on forest floor, usually in rocky areas. No recorded occurrences of Del Norte salamander within a 10-mile radius of the BSA are documented in the CNDDDB (CDFG 2006). However, there is potential for this species to occur in the BSA. No surveys for this species have been completed for the BSA.

2.6.3. Impacts

Osprey

Suitable habitat, which includes forested areas near fish-bearing waters, is marginal due to exposure to strong offshore winds. This species is not expected to occur in the BSA. Therefore, neither direct nor indirect impacts for this species would be anticipated.

Red Tree Vole

Suitable habitat, which includes mature fir trees, could be affected by the proposed project.

Del Norte Salamander

The Del Norte salamander could be affected through removal of rock and other construction-related activities in the BSA.

2.6.4. Avoidance, Minimization, and/or Mitigation Measures

Red Tree Vole

Trees impacted by the project would be surveyed for Red Tree Vole during the Spring and Summer of 2007. Trees with presence would be removed prior to construction outside of the nesting season.

Del Norte Salamander

Suitable habitat is located within the project limits and could potentially inhabit the general landscape. Impacts to the potential habitat would be temporary in nature and the landscape would be re-contoured and planted upon the completion of construction.

2.6.5. Wildlife Corridors

Since the BSA surrounds a major highway, wildlife corridors would not be affected by this project.

2.7. Threatened and Endangered Species

2.7.1. Regulatory Setting

The primary Federal law protecting threatened and endangered species is the FESA (16 USC 1531, et seq.; see also 50 CFR Part 402). This act and subsequent amendments provide for the conservation of endangered and threatened species and the ecosystems upon which they depend. Under Section 7 of this act, Federal agencies, such as the FHWA, are required to consult with the USFWS and NOAA Fisheries to ensure that they are not undertaking, funding, permitting or authorizing actions likely to jeopardize the continued existence of listed species or destroy or adversely modify designated critical habitat. Critical habitat is defined as geographic locations critical to the existence of a threatened or endangered species. The outcome of consultation under Section 7 is a Biological Opinion or an incidental take permit. Section 3 of FESA defines take as “harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect or any attempt at such conduct.”

California has enacted a similar law at the State level, the CESA, California Fish and Game Code, Section 2050, et seq. CESA emphasizes early consultation to avoid potential impacts to rare, endangered, and threatened species and to develop appropriate planning to offset project-caused losses of listed species populations and their essential habitats. The CDFG is the agency responsible for implementing CESA. Section 2081 of the Fish and Game Code prohibits "take" of any species determined to be an endangered species or a threatened species. Take is defined in Section 86 of the Fish and Game Code as "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill." CESA allows for take incidental to otherwise lawful development projects; for these actions an incidental take permit is issued by CDFG. For projects requiring a Biological Opinion under Section 7 of the FESA, CDFG may also authorize impacts to CESA species by issuing a Consistency Determination under Section 2080.1 of the Fish and Game Code.

The California Coastal Act (PRC Sections 30000 et seq.) policies provide standards for coastal development permit decisions. The policies include, among other things, habitat for rare or endangered plants or animals.

2.7.2. Affected Environment

Review of the CNDDDB and CNPS database and USWFS species list indicates that three listed species have the potential to occur within the BSA based on available

habitat and species known ranges. The species with potential to occur in the BSA are described below.

Plants

Review of the USFWS species lists and CNPS and CNDDDB databases indicates that one Federally or State-listed plant species has the potential to occur within the BSA based on available habitat and range of elevation (787 to 1,115 feet). Botanical surveys following the CDFG protocol shall be conducted prior to project implementation in spring and summer 2007 to assess the presence of, or any project-related impacts to, this species. The species with potential to occur in the BSA is described below.

Western lily

Western lily (*Lilium occidentale*) is Federally and State listed as endangered and a CNPS List 1B.1 species. This species, a perennial herb in the Liliaceae family, is found in the following habitats: bogs and fens, coastal bluff scrub, coastal prairie, coastal scrub, freshwater marshes and swamps and canopy openings within North Coast coniferous forest. The elevation range for this species is between 1 and 930 feet. The blooming period for this species is June through July. No surveys for this species have been completed for the BSA, but a survey would be conducted before issuance of a final environmental document.

Wildlife

Two special-status species were identified as having the potential to occur within the BSA. Surveys were conducted, and it was determined that these species had low or no suitable habitat present in the BSA.

The following special-status species have low potential to occur in the BSA based on the suitability of habitat present and results of focused surveys. Figures 11 and 12 depict survey locations for these species.

Marbled Murrelet

The marbled murrelet (*Brachyramphus marmoratus*) occurs only in North America, from Alaska south to Santa Cruz, California (Nelson 1997). This species is State listed as *endangered* and Federally listed as *threatened* in Washington, Oregon, and California. The marbled murrelet is closely associated with old-growth and mature forests for nesting, and population declines have been attributed in part to loss or modification of forest habitat (USFWS 1997). The BSA vicinity is within designated critical habitat for this species but the vicinity has recently been proposed for

exclusion (USFWS 2006b). No recorded occurrences of marbled murrelet within a 10-mile radius from the BSA are documented in the CNDDDB (CDFG 2006). Nine USFWS protocol-level surveys for this species were completed in 2006. Marbled murrelets were detected within and directly adjacent to the BSA. No marbled murrelets were observed to occupy the BSA, and no habitat suitable for occupancy was found in the BSA. The marbled murrelets detected likely fly across the BSA from areas farther inland to access the ocean where fish, their primary food source, is located.

Northern Spotted Owl

The northern spotted owl (*Strix occidentalis*) is Federally listed as *threatened* and a State *species of concern*. The spotted owl is not uncommon over most of its range, which in Northern California includes late seral conifer forests and mixed-conifer woodlands of the coastal mountains. It occurs locally in old growth and second-growth forests. Northern spotted owls prefer large-diameter trees or snags within well-shaded stands for nest sites, where they use old nests built by other species, cavities, or shaded and broken-topped trees. While this species' close association with old growth has been documented extensively (Forsman et al. 1984; Gutiérrez and Carey 1985; Carey et al 1992, Thomas et al. 1990), it is also found nesting in mid- to late-seral forests when stands are highly variable in structure and composition (Spies and Franklin 1991). They prefer an overhead canopy for nests and roost sites for predator protection and protection from extreme heat, especially for nest sites. Northern spotted owls hunt in relatively closed canopy forests with open sub-canopies and moderate stem densities. Critical habitat has been designated for this species; however, it is not within the BSA. No recorded northern spotted owl activity centers are known within 1.4 miles of the BSA. Three northern spotted owls were recorded on the east side of Wilson Creek, 2 miles east of the BSA, and a third site was recorded 2 miles north of the BSA. Three first-year protocol-level surveys were conducted in and around the BSA in 2006, and additional surveys are planned for 2007. No northern spotted owls were detected during 2006 surveys. The lack of northern spotted owl nesting and foraging habitat, lack of historic northern spotted owl sites near the BSA, and the absence of northern spotted owl detections during surveys demonstrates the low probability of northern spotted owl occurring within or adjacent to the BSA.

2.7.3. Impacts

Western Lily

Potential impacts to special-status plants could include permanent, temporary, and indirect effects. Permanent impacts include loss or degradation of habitat due to roadway development. Temporary impacts, which would occur only during the construction period, include increased erosion and vehicle disturbances of habitat. Indirect effects are those that may result after implementation of the project, such as altered hydrology, introduction of invasive non-native species, or reduced genetic exchange. Impacts to special-status plants have not been quantified at this time, but will be assessed after focused surveys are completed Spring and Summer of 2007.

Marbled Murrelet

No marbled murrelet habitat would be affected by the proposed project. While four to five trees would be removed directly adjacent to the highway, none of these trees are part of a stand that might be considered marbled murrelet habitat. As no habitat would be affected, the disturbance would be from noise or other construction activities. The only potential nesting habitat for marbled murrelet that might be affected by noise or construction activities is located 635 feet north of the BSA. Based on USFWS visual (330 feet) and noise disturbance thresholds (USFWS 2006a), the proposed project would not constitute harassment to marbled murrelet.

Northern Spotted Owl

No northern spotted owl habitat would be affected by the proposed project. While four to five trees would be removed directly adjacent to the highway, none of these trees are part of a stand that might be considered northern spotted owl habitat. As no habitat would be affected, the only potential effects would be from noise or construction activities. The USFWS (2006a) estimates a visual disturbance distance of 60 feet for northern spotted owl. No northern spotted owl nests are known within 60 feet of the BSA. However, based on USFWS disturbance thresholds (USFWS 2006a), the proposed project would not constitute harassment to northern spotted owl.



2.7.4. Avoidance, Minimization, and/or Mitigation Measures

Plants

The following measures would be implemented during construction to minimize impacts to special-status plant species:

- Temporary erosion-control devices would be installed on slopes where erosion or sedimentation could degrade sensitive biological resources.
- All temporary disturbance areas would be revegetated upon completion of construction with appropriate combinations of native species unique to the habitats found in the BSA.
- All construction personnel working in the BSA would be required to attend environmental awareness training. At a minimum, the training shall include: (1) an overview of the regulatory requirements for the project, (2) descriptions of the special-status species potentially occurring in the BSA and the importance of these species and their habitats, (3) the general measures that are being implemented to minimize environmental impacts, and (4) the boundaries within which equipment and personnel would be allowed to work during construction. Caltrans would maintain a record of all workers that have completed the program.
- All temporary fill and construction debris would be removed from the BSA after completion of construction activities.
- Invasive species would be removed in the BSA where feasible.
- Upon completion of the project, all areas that have been temporarily affected by the project would be restored to approximate original site conditions, with the exception of non-natives. All vegetation removal shall be minimized to the extent feasible for performing the proposed demolition and construction. Revegetation efforts shall include plants only from the immediate vicinity to maintain genetic integrity.

Focused surveys for special-status plant species would be Spring and Summer of 2007. If special-status plant species are found, they would be avoided to the extent feasible. If impacts to special-status plant species cannot be avoided, impacts would be minimized by preservation, enhancement, and/or restoration of habitat

If special-status plant species are found in the BSA during focused surveys, the biologist would coordinate with the USFWS and CDFG.

Wildlife

Due to the absence of impacts for marbled murrelet and northern spotted owl, no avoidance, minimization, or mitigation measures are proposed.

2.8. Invasive Species

2.8.1. Regulatory Setting

Executive Order 13112 (February 3, 1999) calls for Executive Branch agencies to work to prevent the introduction and control the spread of invasive species and eliminate or minimize their associated economic, ecological, and human health impacts. To prevent the introduction and spread of invasive species, the Department of Transportation has issued policy guidelines, which provide a framework for addressing roadside vegetation management issues for construction activities and maintenance programs.

2.8.2. Affected Environment

Several invasive plant species have the potential to occur in the BSA, since several locations in the BSA are heavily disturbed due to roadside maintenance and landslide activity.

2.8.3. Impacts

Since invasive species within the BSA would be removed, revegetating disturbed areas with erosion control plants would aid in minimizing the reintroduction of invasive species.

2.8.4. Avoidance, Minimization, and/or Mitigation Measures

As directed in Executive Order 13112, Caltrans would implement standard weed control specifications for the construction period. The project biologist would work with Caltrans' landscape architects to develop and implement a revegetation plan. This plan would include removal of non-native vegetation within the BSA that may have re-established since the initial vegetation removal; replanting of native species originally present at the site; and application of species-specific success criteria, consistent with the 1988 Memorandum of Understanding between Caltrans and

USFWS and the subsequent Planning Guidelines for Standard Approaches to Mitigation Site Monitoring and Maintenance (Caltrans and USFWS 2006).

2.9. Cumulative Impacts

It is not anticipated that the project will result in any permanent impacts; therefore the proposed Last Chance Grade Road Stabilization Project is not expected to contribute to cumulative impacts.

Chapter 3. Comments and Coordination

The following contacts have been made in regard to the proposed project.

- Caltrans District 1 conducted a project kick-off meeting on February 28, 2006. Representatives from Del Norte County and California State Parks were in attendance at the meeting.
- The February 28, 2006, kick-off meeting was followed by a site visit on March 1, 2006. A representative from State Parks was in attendance.
- Michelle St. Clair, URS Archaeologist, sent a preliminary project description and offer to comment by mail to a list of potentially interested individuals identified by the Native American Heritage Commission on March 10, 2006.
- Frank Galea of Galea Wildlife Consulting spoke to Ray Bosch of the U.S. Fish and Wildlife Service on September 19, 2006, regarding the impact analysis for marbled murrelet and northern spotted owl.
- Caltrans District 1 conducted an external Project Development Team meeting with representatives from State Parks, Del Norte County and the California Coastal Commission on October 11, 2006. The goal of this meeting was to provide an update on the project. An overview of the project was presented by Caltrans Design, and visual simulations of the retaining wall options were presented for review and comment from the three aforementioned agencies. As a result of the meeting, State Parks shared preferences regarding the appearance of retaining walls and offered guidance on how to make the proposed walls consistent with other road-stabilizing features, such as Cushion Creek, located nearby. A representative of the California Coastal Commission conveyed that the Commission wanted to be sure that State Park's concerns are addressed, and indicated that it would concur with the decision made by State Parks regarding the appearance of the proposed retaining walls.



Chapter 4. List of Preparers

Caltrans

Cindy Anderson - Supervising Environmental Planner; B.S. Environmental Science, Johnson State College; seven years experience in environmental planning incorporating NEPA/CEQA compliance. Contribution: Supervision, Technical Review

Kevin Church - Senior Transportation Engineer; B.S. in Civil Engineering, University of California at Berkeley, Registered Professional Engineer (CE 61822); 9 years experience working for Caltrans in Construction, Hydraulics, and Project Management. Contribution: Project Manager

Dorene Clement - Senior Environmental Planner; B.A. History, CSU-Sacramento; Graduate work in History, CSU-Sacramento; 28 years experience in California cultural resources and California History. Contribution: HRER

Barry Douglas - Associate Environmental Planner; Caltrans PQS; Prehistoric Archaeology; B.A. Anthropology, Purdue University, M.A. Anthropology/History Humboldt State University; 27 years experience in Northern California cultural resources. Contribution: Technical Reviewer

Deborah Harmon - Senior Environmental Planner; B.A. Geography, UC Santa Barbara; B.A. Environmental Studies, UC Santa Barbara; 25 years experience preparing and reviewing NEPA/CEQA documents. Contribution: Quality Control Review

Jim Hibbert - Landscape Associate, California Licensed Landscape Architect No. 5136; B.A. Geography, University of Alaska-Fairbanks; 2nd B.L.A. Landscape Architecture, University of Oregon; Seven years experience in landscape architecture. Contribution: Technical Reviewer

Andrew Hope - Associate Environmental Planner; B.S. Architecture, University of Michigan; Master of Architecture, University of Wisconsin at Milwaukee; 18 years experience in architectural history and historic preservation. Contribution: FOE

Patrick Kyo - Project Engineer; B.S. California State University Sacramento; 10 years Civil Engineering Experience Brandley Engineering; 7 years experience at Caltrans, 7 years in Design. Contribution: Assistant Project Engineer

Peter Lewendal - Associate Environmental Planner (Natural Sciences); B.S. Wildlife Management, Humboldt State University; 16 years experience NEPA, CEQA, and Federal/State Endangered Species Act Compliance. Contribution: Technical Reviewer

David Melendrez - Senior Transportation Engineer; B.S. Environmental Resources Engineering, Humboldt State University; 16 years experience in Water Quality. Contribution: Technical Reviewer

Charles Olson - Senior Transportation Engineer; B.S. California State University Sacramento; 19 years experience at Caltrans, 17 years in Design. Contribution: Design Engineer and Project Engineer

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Benjamin Tam - Contribution: Water Quality Technical Reviewer

Sharon Tang - Air/Noise Specialist, 5 years experience working for Caltrans in Environmental. Contribution: Technical Reviewer

Scott M. Williams - Associate Environmental Planner; B.S. Sociology, Oregon State University; six years experience in environmental planning incorporating NEPA/CEQA compliance, seven years with Caltrans. Contribution: Quality Assurance/Task Order Manager, focal contact point between Caltrans and URS, preparation of the Initial Study.

URS

Chris Bente - GIS Specialist; B.A. Geography, San Francisco State University; 8 years professional experience. Contribution: preparation of maps for various technical reports and the Initial Study/Environmental Assessment.

Vance Bente - Archaeologist; B.A., M.A., Anthropology, California State University; 29 years professional experience. Contribution: QA/QC of Archaeological Survey Report

David Fee – Senior Project Manager; B.A. Anthropology, San Francisco State University, M.A., Anthropology, University of Arizona; 25 years professional experience. Contribution: preparation and QA/QC of the Initial Study/Environmental Assessment.

Jason D. Jones – Environmental Planner; B.A., Asian Studies, M.A., Asian Studies, Grad. Cert., Historic Preservation, University of Hawaii at Manoa; 8 years professional experience. Contribution: Preliminary preparation of the Initial Study.

Corinna Lu – Senior Biologist; B.A., Biology, UC Santa Cruz, M.S., Geography, UCLA; 10 years professional experience. Contribution: preparation of Natural Environment Study.

Lynn McIntyre – Senior Technical Editor; B.A. Journalism, San Francisco State University; 16 years professional experience. Contribution: preparation of the Initial Study/Environmental Assessment.

Eric Rivero-Montez – Project Engineer; B.S., Chemical Engineering, UC Berkeley; 4 years professional experience. Contribution: preparation of Air Quality Report.

Michelle St. Clair – Archaeologist; B.A., Anthropology, UC Santa Cruz, M.A., Anthropology, College of William and Mary; 7 years professional experience. Contribution: preparation of Archaeological Survey Report.

Jeff Zimmerman – Senior Project Manager; B.S., Conservation of Natural Resources, UC Berkeley; 25 years professional experience. Contribution: QA/QC of the Initial Study/Environmental Assessment.

Haygood and Associates

Leah Haygood – Principal, Landscape Architect; B.A., Environmental Design, UC Berkeley, PhD, Clinical Psychology, Center for Psychological Studies; 36 years professional experience. Contribution: preparation of Visual Impacts Assessment.

Charlene Saito-Production Manager. B.S., Landscape Architecture. Contribution: assisted in preparation of Visual Impact Assessment.

Ibis Environmental

Frank Galea – Senior Biologist, Certified Wildlife Biologist; M.S., Humboldt State University; 18 years professional experience. Contribution: wildlife surveys, preparation of Natural Environment Study.

Sue Orloff - Principal, Certified Wildlife Biologist; M.A., Sonoma State University; 27 years professional experience. Contribution: preparation of Natural Environment Study.

Illingworth and Rodkin

Dana M. Lodico – Staff Consultant; B.S., Civil Engineering, University of Colorado at Boulder, M.S. Building Science/Architectural Acoustics, Rensselaer Polytechnic Institute; 3 years professional experience. Contribution: preparation of Noise Study

Keith Pommerenck – Senior Consultant; B.A., Environmental Resources, CSU Sacramento; 22 years professional experience. Contribution: Noise Study

Mara Feeney and Associates

Mara Feeney – Principal; B.A., Anthropology, Bryn Mawr College, M.A., Community and Regional Planning, University of British Columbia; 30 years professional experience. Contribution: preparation of Community Impact Analysis, Section 4(f) Evaluation.

Linda Meckel – Associate; B.A., Anthropology and Zoology, University of Washington; 1 year professional experience. Contribution: preparation of Community Impact Analysis, Section 4(f) Evaluation.

WRECO

Wana Chiu – Staff Engineer; B.S. Civil Engineering, University of the Pacific; 3 years professional experience. Contribution: preparation of Hydrology and Water Quality Study.

Ulysses Hillard – Senior Engineer; B.A. History, UC Santa Cruz, B.S. Environmental Engineering Science, UC Berkeley, M.S.E. Water Resources, Hydrology and Hydraulics, University of Washington; 10 years professional experience. Contribution: preparation of Hydrology and Water Quality Study.

Han Bin Liang – Principal; B.S. Agricultural Engineering, National Taiwan University, M.S. Civil Engineering (Hydraulic and Coastal), UC Berkeley, PhD, Civil Engineering (Hydraulic and Coastal), UC Berkeley; 20 years professional experience. Contribution: preparation of Hydrology and Water Quality Study.

Maria del Carmen Rocha – Staff Engineer; B.S. Civil Engineering, San Francisco State University; 4 years professional experience. Contribution: preparation of Hydrology and Water Quality Study

Chapter 5. Distribution List

Federal Agencies

U.S. Department of Interior, Fish and Wildlife Service
U.S. Department of Interior, National Parks
U.S. Army Corps of Engineers
Federal Highway Administration

State Agencies

North Coast Regional Water Quality Control Board
California Coastal Commission
California Highway Patrol
California Department of Fish and Game
California Department of Parks and Recreation
Native American Heritage Commission
Office of Historic Preservation
Humboldt State University Library

Public, Private and Regional Organizations

North Coast Unified Air Quality Management District
Del Norte County Unified School District
Del Norte Local Transportation Commission

Local Agencies

City of Crescent City
County of Del Norte Board of Supervisors
County of Del Norte, Community Development Department
Del Norte County Library, Crescent City
County of Del Norte

Tribal Organizations

Elk Valley Rancheria
Resighini Rancheria
Smith River Rancheria
Yurok Tribe

Chapter 6. References

The following references were used in the preparation of this document; not all references are sighted in the text.

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Chapter 7. List of Technical Studies

The following documents were prepared to support the proposed project:

- Air Quality Study (URS, July 2006)
- Archaeological Survey Report (URS, March 2007)
- Community Impact Analysis (Mara Feeney and Associates, August 2006)
- Preliminary Geotechnical Report (Caltrans, May 2001)
- Initial Site Assessment (ISA)/Hazardous Materials Summary (Caltrans 2003)
- Natural Environment Study (URS, October 2006)
- Noise Study (Illingworth & Rodkin, August 31, 2006)
- Section 4(f) Evaluation (Mara Feeney and Associates, November 2006)
- Visual Impact Assessment (Haygood and Associates, January 2007)
- Water Quality Analysis (WRECO, November 2006)

Appendix A CEQA Checklist

The following checklist identifies physical, biological, social, and economic factors that might be affected by the proposed project. The CEQA impact levels include potentially significant impact, less-than-significant impact with mitigation, less-than-significant impact, and no impact. Please refer to the following for detailed discussions regarding impacts:

CEQA requires that environmental documents determine significant or potentially significant impacts. In many cases, background studies performed in connection with the project indicate no impacts. A “no impact” reflects this determination. Any needed explanation of that determination is provided at the beginning of Chapter 2.

Potentially significant impact	Less than significant impact with mitigation	Less than significant impact	No impact
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AESTHETICS - Would the project:

a) Have a substantial adverse effect on a scenic vista?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic building within a state scenic highway?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Substantially degrade the existing visual character or quality of the site and its surroundings?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

AGRICULTURE RESOURCES - In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. Would the project:

a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to nonagricultural use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to nonagricultural use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

AIR QUALITY - Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the project:

a) Conflict with or obstruct implementation of the applicable air quality plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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Potentially significant impact	Less than significant impact with mitigation	Less than significant impact	No impact
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b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable Federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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d) Expose sensitive receptors to substantial pollutant concentration?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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e) Create objectionable odors affecting a substantial number of people?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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BIOLOGICAL RESOURCES - Would the project:

a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?

<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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c) Have a substantial adverse effect on Federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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Potentially significant impact	Less than significant impact with mitigation	Less than significant impact	No impact
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f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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CULTURAL RESOURCES - Would the project:

a) Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?

<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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d) Disturb any human remains, including those interred outside of formal cemeteries?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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GEOLOGY AND SOILS - Would the project:

a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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ii) Strong seismic ground shaking?

<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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iii) Seismic-related ground failure, including liquefaction?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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iv) Landslides?

<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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b) Result in substantial soil erosion or the loss of topsoil?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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Potentially significant impact	Less than significant impact with mitigation	Less than significant impact	No impact
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d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property.

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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HAZARDS AND HAZARDOUS MATERIALS –

Would the project:

a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?

<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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c) Emit hazardous emissions or handle hazardous or acutely hazardous material, substances, or waste within one-quarter mile of an existing or proposed school?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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Potentially significant impact	Less than significant impact with mitigation	Less than significant impact	No impact
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HYDROLOGY AND WATER QUALITY - Would be the project:

a) Violate any water quality standards or waste discharge requirements?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) Otherwise substantially degrade water quality?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
g) Place housing within a 100-year flood hazard area as mapped on a Federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
j) Inundation by seiche, tsunami, or mudflow?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Potentially significant impact	Less than significant impact with mitigation	Less than significant impact	No impact
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LAND USE AND PLANNING - Would be the project:

- | | | | | |
|---|--------------------------|--------------------------|--------------------------|-------------------------------------|
| a) Physically divide an established community? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| c) Conflict with any applicable habitat conservation plan or natural community conservation plan? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

MINERAL RESOURCES - Would the project:

- | | | | | |
|---|--------------------------|--------------------------|--------------------------|-------------------------------------|
| a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| b) Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

NOISE - Would the project:

- | | | | | |
|---|--------------------------|--------------------------|-------------------------------------|-------------------------------------|
| a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

Potentially significant impact	Less than significant impact with mitigation	Less than significant impact	No impact
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f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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POPULATION AND HOUSING - Would the project:

a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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PUBLIC SERVICES -

a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:

Fire protection?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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Police protection?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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Schools?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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Parks?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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Other public facilities?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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RECREATION -

a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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Potentially significant impact	Less than significant impact with mitigation	Less than significant impact	No impact
--------------------------------	--	------------------------------	-----------

b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
--------------------------	--------------------------	--------------------------	-------------------------------------

TRANSPORTATION/TRAFFIC - Would be the project:

a) Cause an increase in traffic which his substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, the volume to capacity ratio on roads, or congestion at intersections)?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
--------------------------	--------------------------	--------------------------	-------------------------------------

b) Exceed, either individually or cumulatively, a level of service standard established by the county congestion management agency for designated roads or highways?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
--------------------------	--------------------------	--------------------------	-------------------------------------

c) Result in a change in air traffic patters, including either an increase in traffic levels or a change in location that results in substantial safety risks?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
--------------------------	--------------------------	--------------------------	-------------------------------------

d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incomplete uses (e.g., farm equipment)?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
--------------------------	--------------------------	--------------------------	-------------------------------------

e) Result in inadequate emergency access?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
--------------------------	--------------------------	--------------------------	-------------------------------------

f) Result in inadequate parking capacity?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
--------------------------	--------------------------	--------------------------	-------------------------------------

g) Conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks)?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
--------------------------	--------------------------	--------------------------	-------------------------------------

UTILITY AND SERVICE SYSTEMS - Would be the project:

a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
--------------------------	--------------------------	--------------------------	-------------------------------------

b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
--------------------------	--------------------------	--------------------------	-------------------------------------

c) Require or result in the construction of new stormwater drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
--------------------------	--------------------------	--------------------------	-------------------------------------

Potentially significant impact	Less than significant impact with mitigation	Less than significant impact	No impact
--------------------------------	--	------------------------------	-----------

d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
--------------------------	--------------------------	--------------------------	-------------------------------------

e) Result in determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
--------------------------	--------------------------	--------------------------	-------------------------------------

f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
--------------------------	--------------------------	--------------------------	-------------------------------------

g) Comply with Federal, state, and local statutes and regulations related to solid waste?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
--------------------------	--------------------------	--------------------------	-------------------------------------

MANDATORY FINDINGS OF SIGNIFICANCE -

a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, or cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
--------------------------	--------------------------	--------------------------	-------------------------------------

b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
--------------------------	--------------------------	--------------------------	-------------------------------------

c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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Appendix B List of Acronyms and Abbreviations

AC	asphalt concrete
ADA	Americans with Disabilities Act
APE	Area of Potential Effects
ASR	Archaeological Survey Report
BMP	Best Management Practice
BSA	Biological Study Area
Caltrans	California Department of Transportation
CARB	California Air Resources Board
CCC	California Coastal Commission
CCR	California Code of Regulations
CDFG	California Department of Fish and Game
CEQA	California Environmental Quality Act
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
CESA	California Endangered Species Act
CFR	Code of Federal Regulations
cfs	Cubic feet per second
CNDDDB	California Natural Diversity Data Base
CNPS	California Native Plant Society
CO	carbon monoxide
CWA	Clean Water Act
CZMA	Coastal Zone Management Act
dBA	A-weighted decibel
EA	Environmental Assessment
FEMA	Federal Emergency Management Agency
FERS	Floodplain Evaluation Report Summary
FESA	Federal Endangered Species Act
FHWA	Federal Highway Administration
FONSI	Finding of No Significant Impact
HRER	Historic Resources Evaluation Report
IS	Initial Study
LCPs	Local Coastal Programs
$L_{eq[h]}$	Noisiest hour expressed as the energy-average of the A-weighted noise level occurring during a one-hour period
$\mu\text{g}/\text{m}^3$	microgram(s) per cubic meter
M	moment magnitude, an earthquake intensity measure
MCE	Maximum Credible Earthquake
MND	Mitigated negative declaration
NAAQS	National Ambient Air Quality Standards
NAC	Noise Abatement Criteria
NAHC	Native American Heritage Commission
NCAB	North Coast Air Basin
NCUAQMD	North Coast Unified Air Quality Management District
ND	Negative declaration
NEPA	National Environmental Policy Act
NES	Natural Environment Study

NHPA	National Historic Preservation Act
NO ₂	nitrogen dioxide
NOI	Notice of Intent
NOAA Fisheries	National Marine Fisheries Service
NPDES	National Pollutant Discharge Elimination System
NRHP	National Register of Historic Places
O ₃	Ozone
PA	Programmatic Agreement
Pb	Lead
PM	Post mile
PM ₁₀	particulate matter less than 10 micrometers in diameter
PM _{2.5}	particulate matter less than 2.5 micrometers in diameter
PRC	Public Resources Code
PSR	Project Study Report
RCR	Route Concept Report
RCRA	Resource Conservation and Recovery Act
RNSP	Redwood National and State Parks
RTP	Regional Transportation Plan
RWQCB	Regional Water Quality Control Board
SAAQS	State Ambient Air Quality Standards
SHPO	State Historic Preservation Officer
SIP	State Implementation Plan
SO ₂	sulfur dioxide
SO _x	sulfur oxides
SWPPP	Storm Water Pollution Prevention Plan
SWRCB	State Water Resources Control Board
TIP	Transportation Improvement Program
UNESCO	United Nations Educational Scientific and Cultural Organization
US 101	U.S. Highway 101
USACE	U.S. Army Corps of Engineers
USC	United States Code
USEPA	U.S. Environmental Protection Agency
USFWS	U.S. Fish and Wildlife Service
VA	Value Analysis
WPCP	Water Pollution Control Program

Appendix C Title VI Policy Statement

STATE OF CALIFORNIA—BUSINESS, TRANSPORTATION AND HOUSING AGENCY

ARNOLD SCHWARZENEGGER, Governor

DEPARTMENT OF TRANSPORTATION
OFFICE OF THE DIRECTOR
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SACRAMENTO, CA 94273-0001
PHONE (916) 654-5266
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*Flex your power!
Be energy efficient!*

January 14, 2005

TITLE VI POLICY STATEMENT

The California Department of Transportation under Title VI of the Civil Rights Act of 1964 and related statutes, ensures that no person in the State of California shall, on the grounds of race, color, national origin, sex, disability, and age, be excluded from participation in, be denied the benefits of, or be otherwise subjected to discrimination under any program or activity it administers.

A handwritten signature in black ink, appearing to read "Will Kempton".

WILL KEMPTON
Director

Appendix D 4(f) Written Agreement

**Last Chance Grade
Del Norte 101, Post Mile 14.8/ 15.6
EA 324700**

**Section 4(f) of the Department of Transportation Act (49 U.S.C. 303);
Temporary Occupancy Written Agreement**

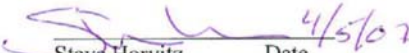
The California Department of Transportation (Caltrans) in cooperation with the Federal Highway Administration (FHWA) proposes to stabilize a portion of US 101, Known as Last Chance Grade, located approximately 11 miles north of Klamath in Del Norte County.

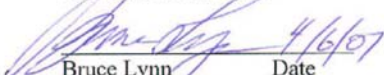
The proposed project would construct six retaining walls, three on the west side of US 101 (below the roadway) and three on the east (uphill) side. This alternative would hug the terrain to the east part of US 101 in order to minimize the need for retaining walls and to eliminate permanent right-of-way needs to the west of the alignment. The existing concrete k-rail would be replaced with an aesthetically treated (acid etched) Metal Beam Guard Rail (MBGR). The project would add 4-foot shoulders throughout the project limits and additional shoulder widths in front of the retaining walls to accommodate the space beyond the proposed MBGR needed to deflect a vehicle in case of impact. Due to settlement, the profile of the new road would change up to 3 feet to smooth out the grade within the project limits.


The heights of the retaining walls would vary from 3 to 50 feet, with the taller walls located on the west (ocean) side below the highway. Through coordination with Caltrans, State Parks has provided input with regard to aesthetic treatments to be used on the retaining walls. To the greatest extent feasible, all suggestions will be incorporated in to the project. Construction would require temporary construction easements totaling approximately 0.64 acres (ocean side only) within Del Norte Coast Redwoods State Park and no Permanent right-of-way would be required.


This project meets the requirements under Section 4(f) of the Department of Transportation Act (49 U.S.C. 303) as a *Temporary Occupancy*. All of the following apply:

- Duration of occupancy is temporary, i.e., less than the time needed for construction of the project, and there will be no change in ownership of the land;
- Scope of the work is minor, i.e., both the nature and magnitude of the changes to the 4(f) resource is minimal;
- There are no anticipated permanent adverse physical impacts, nor will there be interference with the activities or purposes of the resource, on either a temporary or permanent basis, and
- The land being used will be fully restored, i.e., the resource will be returned to a condition which is at least as good as that which existed prior to the project.


Steve Horvitz Date 4/5/07
District Superintendent,
North Coast Sector,
California State Parks


Bruce Lynn Date 4/6/07
Park Superintendent,
Redwood Coast Sector,
California State Parks


Rod Parsons Date 4-5-2007
Environmental Branch Chief,
Caltrans, District 1


Kevin Church Date 4/5/07
Project Manager
Caltrans, District 1